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EXPERIENCE UNDER INTERGOVERNMENTAL COMMODITY AGREEMENTS, 1902–45

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INTERGOVERNMENTAL commodity agreements were seriously considered at the World Monetary and Economic Conference in London in June–July, 1933, primarily as means to facilitate recovery from severe economic depression. The role of such agreements in the postwar world was an important issue at the United Nations Conference on Food and Agriculture at Hot Springs in May–June, 1943. During this decade and subsequently, able minds have wrestled with relevant problems of principle, policy, and practice, and some approach to a consensus is in process of being hammered out. This subject will be on the agenda of the International Conference on Trade and Employment, which is proposed to be held in 1946.[1]

Experience with multilateral intergovernmental commodity agreements (conveniently abbreviated "I.C.A.'s") has been limited rather than extensive. On the whole, it has yielded more warnings than promise. But so varied have been the types and the degrees of success that this body of experience merits scrutiny. Only scant reference to it appears in the valuable book in which the International Labour Office published a collection of relevant documents, together with an introductory review of the literature (through early 1943) and an analysis of the problems of international commodity control.[2] The tea-, tin-, and rubber-control authorities each subsequently published an extensive review of its operations over a decade. These I.C.A.'s and a few others have been more or less intensively analyzed by various scholars. Enough ignorance and misunderstanding nevertheless persist, even in quarters usually well informed, to warrant the presentation of an orderly summary of I.C.A. experience to the end of 1945.

[1] U.S. Department of State, *Proposals for Expansion of World Trade and Employment* (Pub. 2411 [November, 1945]).

[2] *Intergovernmental Commodity Control Agreements* (Montreal, 1943), hereinafter cited as "I.L.O., *I.C.C.A.'s*." Works by J. W. F. Rowe; W. Y. Elliott and others; B. B. Wallace and L. R. Edminster; and C. R. Whittlesey are outstanding in the I.C.A. literature reviewed by the I.L.O. and not specifically cited in this article. Most of the commodities here dealt with are considered, for the most part briefly, in the numerous "case studies" in Ervin Hexner, *International Cartels* (Chapel Hill, N.C., 1945), which reached the present author while this manuscript was in the hands of the editors.

In the sense here used, an I.C.A. is an agreement on a specific commodity or closely related group of commodities, chiefly foodstuffs and primary materials, made by two or more participating governments or with their approval and cooperation, involving study of the international aspects of the commodity and/or some form of regulation of its trade, production, and/or prices. I.C.A.'s are to be distinguished from (*a*) unilateral national commodity controls of great variety; (*b*) highly specialized bilateral intergovernmental agreements, involving one or a few specific commodities; (*c*) bilateral or multilateral intergovernmental agreements covering many commodities and/or commercial policy and practice; and (*d*) international cartel agreements among two or more business concerns.

I.C.A.'s are most conveniently discussed in three groups. The first group comprises I.C.A.'s for tin, tea, and rubber, which were the most significant and, on the whole, the most successful. The second group includes I.C.A.'s for three agricultural products—wheat, sugar, and coffee—which are often spoken of as tending to be in "chronic surplus." The third group, quite heterogeneous in character, includes most of the oldest I.C.A.'s, as well as a few very recent ones.

TIN, RUBBER, AND TEA I.C.A.'S

The most important I.C.A.'s concerned tin, rubber, and tea. All arose from producer groups, whose influence continued so powerful that all three are not infrequently but misleadingly called "cartels." All were under Anglo-Dutch leadership. Each involved only a few governments and producing areas. The latter were chiefly Empire dependencies in southeastern Asia, which had fallen into grave distress in the great depression. In the three cases many of the problems were similar—indeed, to some extent overlapping—and there was a good deal of interlocking of interests and personnel. These factors contributed heavily to the degree of success attained.

Parties to these agreements included no governments of net-importing countries as such, although the mother-countries, Britain and Holland, were net importers of all three commodities. The tea agreement, indeed, owed its success partly to the fact that Great Britain, with Empire interests in tea production, predominates in tea consumption. The rubber-manufacturing industries of the United States—the largest user of crude and reclaimed rubber—and of European countries were accorded limited opportunities for advisory participation in the Rubber Regulating Committee's deliberations. The tin agreements of 1937 and 1942 belatedly included similar provisions; but as early as 1934 the International Tin Committee had set up a "consumers' panel," representing industrial consumers of tin in the United States and the United Kingdom.

TIN

The first intergovernmental arrangement for tin was the Bandoeng Pool, formed in February, 1921, by the governments of the Federated Malay States (F.M.S.) and the Netherlands Indies, to buy up to 20,000 tons of excess tin supplies which had accumulated in tin-producing regions and to hold them until tin prices had recovered.[3] In retrospect, it appears to have provided a sort of organized liquidation of a wartime com-

[3] This pool is discussed in K. E. Knorr, *Tin under Control* ("Food Research Institute, Commodity Policy Studies," No. 5 [Stanford University, Calif., 1945]), pp. 73–77, which provides the fullest discussion of the successive tin agreements. The subject is covered much more briefly, from the viewpoint of the tin control, in *International Tin Control and Buffer Stocks* (London: Tin Producers' Assoc., [1944]).

modity surplus, of which the British-Australian Wool Realisation Association (B.A.W.R.A.) was a better contemporary example. The tin so acquired was disposed of in the period from April, 1923, to December, 1924, at a substantial profit to the participants, on the rising market that accompanied flourishing industrial activity in 1923 and 1924.

The Bandoeng Pool's operations, however, helped to obscure the tendency for world absorption of tin to run ahead of output capacity. When this became evident, in 1925–26, tin prices soared. High prices, together with declining costs accompanying technological improvements, greatly overstimulated expansion of producing capacity. Even at the peak of world tin absorption in 1928 and 1929, stocks accumulated and prices declined. Under these circumstances, shrinkage of demand in the severe recession of 1929–31 drove tin prices down sharply.

Meanwhile, the process of financial combination expanded greatly in tin mining and tin smelting, with British, Dutch, and Bolivian (Patiño) interests predominating. The Anglo-Oriental Mining Corporation, Ltd., was the largest single factor. It led in forming the Tin Producers' Association (T.P.A.), founded in 1929. In 1929–30 the T.P.A. fostered a voluntary restriction scheme, which met with increasingly wide cooperation, except in the F.M.S. As conditions grew worse, even the more reluctant governments of the F.M.S. and the Netherlands Indies accepted the idea of an international output-restriction plan, which became effective March 1, 1931.

The first chairman of T.P.A. was Sir Philip Cunliffe-Lister—since 1935, Lord Swinton. Long prominent in British business and government circles, he has been chairman of the United Kingdom Commercial Corporation since 1920, was president of the Board of Trade in 1924–29 and 1931 and colonial secretary in 1931–35, and has been active in various commodity-control schemes and related policies for many years. Sir John Campbell, economic and financial adviser to the British Colonial Office in 1930–42, presided over the London conference at which the first tin agreement was adopted and has since been chairman of the administrative body, the International Tin Committee. He later became chairman of the International Rubber Regulation Committee (1934–44) and the International Sugar Council (1937——) and served as a member of the International Tea Committee (1933——).

The International Tin Control Scheme of 1931 was an international producers' scheme with the form of an intergovernmental agreement. The original parties were the British dependencies Malaya and Nigeria, the Netherlands East Indies, and Bolivia. Siam (later renamed "Thailand") was soon brought in. Initially planned for two years, it was first extended and then replaced by a three-year agreement, effective January 1, 1934. To this, five other governments adhered on July 10, 1934. When the second agreement expired in 1937, it was replaced by a third five-year agreement, signed by seven countries. The most matured form of the agreement was signed September 7, 1942, to be effective in 1942–46. In form this was an agreement among the four governments of Belgium, Bolivia, the Netherlands, and the United Kingdom. There were several supplementary agreements concerning details in the main agreements, buffer stocks, and tin research.[4]

The avowed objectives of the tin-control scheme are typically expressed in some such form as the following excerpt

[4] All these agreements are reprinted in I.L.O., *I.C.C.A.'s*, pp. 73–103.

from the preliminary paragraph in the 1942 agreement:

> . . . . it is necessary and advisable that steps should be taken to regulate the production and export of tin in and from producing countries with the object of keeping world stocks at a normal figure, adjusting in an orderly manner supply to demand, while at the same time making available all the tin that may be required and preventing rapid and severe oscillations of price. . . . .

The controllers' review of their operations puts the case for international tin control thus:

> Apart from important ancillary activities such as statistical research and development bureaux, the main functions of the International Tin Committee have been to prevent the excessive accumulation of stocks, and to maintain an ample supply of Tin at a reasonable price. . . . .
>
> Tin Control not only serves the interests of producers. It arises from the complementary needs of consumers and producers. A reasonable and stable price is required by both. Tin being a commodity for which demand is exceptionally inelastic, a reduction in price, however severe, does not lead to any increase in consumption and the result must be to make many producers suspend operations. When demand recovers, the rise in prices will be all the sharper for the fact that many mines are out of production.
>
> Tin Control has removed these dangers and its advantages to consumers have never been more fully demonstrated than in time of war. If the industry's productive capacity had not been maintained in times of depression, how would it have been possible to build up those great reserves without which the loss of the Eastern producing areas would have been a crippling blow? Without the price stability given by regulation this capacity would not have existed.
>
> After the war Tin Control will have equally important functions to perform. The maintenance of world prosperity demands that the work of primary producers shall be kept remunerative. The Tin industry is ready to play its part, and the machinery of control remains in existence to meet the needs of the post-war world.

Throughout its life the tin control has operated through changing export quotas, expressed as percentages of agreed "standard tonnages," for the participating exporting countries. Coupled with restrictions on the size of tin stocks in those countries, these entailed production curtailment enforced by the local governments. Initially, the quotas set by the control committee were subject to the consent of the signatory governments, but this was soon dispensed with. The governments stood ready to take the measures necessary to give effect to the committee's decisions. Quotas were fixed with a view to influencing stocks in importing countries and, thereby, tin prices in the world markets. At various times, beginning in August, 1931, specially controlled "buffer stocks" were acquired to prevent disastrous price declines; these were subsequently released after the pressure had disappeared. In 1940 and 1941, agreements were made between the control committee and United States government agencies on the building of American stock piles of tin, with terms designed to insure "orderly" liquidation of such reserves. Since early in 1942, after the Japanese conquests in the southwest Pacific, the tin control has been relatively inactive.

Critical studies of the tin-control experience, before and during the present war, do not bear out the insiders' view as to its achievements, though the scheme has supporters in trade and industry circles in the United States. It was clearly successful in preventing excessive accumulation of tin stocks, in keeping tin prices generally remunerative even to high-cost tin producers, and in preventing the liquidation of such concerns and the contraction of tin-mining plants that were threatened at certain periods. There was no serious attempt to readjust ex-

cessive productive capacity. Production outside the participating countries rose, and research on tin substitutes was stimulated, but neither went far enough to break down the control. It stands out, however, as the clearest example of a monopolistic restrictionist scheme, backed by the governments of leading producing countries, exploitive of processors and ultimate consumers, and inadequately responsive to the interests of either group. On the whole, tin prices were maintained at levels unreasonably high, and various opportunities were taken to push them higher. Except in a two-year period ending late in 1935, price stability was not achieved. At most, the speculative peak in tin prices in 1937 was less striking than in prices of some other basic materials, such as copper, rubber, and wool. Even with the aid of buffer stocks and, from 1937 on, with some liberalization of permitted mine-head stocks of tin concentrates, supplies of tin were maintained at levels too low and were not released fast enough to meet important changes in demand. Radical changes in export quotas made tin production highly unstable. The restrictions were applied in such ways as to raise total average costs and to hinder normal expansion of low-cost production.

RUBBER

The International Rubber Regulation Agreement (I.R.R.A.) of 1934 was devised in the depths of the great depression to cope with the economic disasters that engulfed the rubber-plantation industry in southeastern Asia.[5] Of its several forerunners, the most important was the so-called Stevenson Plan, which was in force for six years, beginning November 1, 1922. When the Netherlands government decided against co-operating, this was put into operation as a British scheme applicable to British Malaya and Ceylon, with the support of their governments and with the voluntary co-operation of British plantation owners in the Netherlands Indies. It operated through export restrictions, enforced by prohibitive export duties, designed to raise prices to a "pivotal" figure. Export quotas were automatically adjusted according to price changes, on a basis that was revised at the end of April, 1926, after the wildest fluctuations in rubber prices. From almost every standpoint the Stevenson Plan worked very badly, and it is now held in low repute. The high prices of rubber, for which it was heavily responsible, overstimulated new planting of higher-yielding trees that had just come into production when consumption fell off in the depression. The high prices also greatly stimulated increased output and consumption of reclaimed rubber, which continued as an important factor in supplies.

The I.R.R.A. of 1934 and its very similar successor agreement of 1938 brought under regulation the production and export of rubber from all the rubber-growing areas in southeastern Asia, where nearly all the world's natural rubber was produced. The participating governments were the British, Indian, Dutch, French, and Siamese, and complementary legislation by British, Dutch, and French dependencies was involved.

[5] *The History of Rubber Regulation, 1934–43*, edited by Sir Andrew McFadyean for the International Rubber Regulation Committee (London, 1944), gives a fairly detailed interpretative account, with relevant documents and an annotated list of members of the controlling committee (pp. 177–86). Relevant documents are readily accessible in I.L.O., *I.C.C.A.'s*, pp. 104–31, 178–80. The experience is carefully analyzed in K. E. Knorr, *World Rubber and Its Regulation* ("Food Research Institute, Commodity Policy Studies," No. 6 [Stanford University, Calif., 1945]).

The avowed objectives of the I.R.R.A. were very similar to those for tin. The basic implicit objective was to prevent liquidation of estate companies in consequence of the very low rubber prices—which, in turn, were due to surplus output capacity coupled with extreme weakness of demand for rubber—and to hold in check the gradual encroachment of lower-cost native producers. Toward these ends the scheme involved immobilizing part of the producing capacity, freezing the status quo between estate and native producers by means of production quotas, and restricting new planting and replanting.

A second implied objective was to permit regular and "fair" profits to investors in rubber estates. Such profits had been nonexistent or small for several years prior to 1934. For a longer period they had been irregular because of the volatility of the rubber market, since neither supply nor consumption responded readily to price changes. To meet this situation, the I.R.R.A. provided for flexible regulation of exports so as to permit liquidation of excessive stocks and to improve the level and stability of prices.

The few participating governments gave their support because of the influence of their investors, the concern of governments in correcting depression in the producing areas, and the national interest in getting larger sales returns from rubber to raise their international purchasing-power.

The scheme succeeded in achieving its two basic purposes, with one exception: It did not prevent substantial fluctuations in rubber prices and profits, though it faced no test comparable in severity with the violent recession of 1929–32. The failure to achieve the stability objective was due, in part, to the short-term unresponsiveness of rubber consumption and supplies to price changes and, in part, to the fact that stocks were kept at a relatively low level in order to keep prices fairly high. In the 1937 boom, prices ran up very high because export quotas were not raised soon enough. The influence of rubber manufacturers and of the United States government, expressed both indirectly and through the advisory panel of the regulating committee, helped to prevent such exploitation of consumers as occurred under the contemporary tin control and the earlier Stevenson Plan for rubber. But the theory and practice of the control were such as to give rise to criticisms only less severe than in the case of the tin control.

The tasks of the International Rubber Regulation Committee (I.R.R.C.) were extremely onerous. They did much to improve the statistical basis for the decisions they had to take. They took counsel at their meetings not only with the advisory panel but with outside persons. Most decisions were reached without formal voting—in fifty-eight meetings over a period of nine years only three votes were taken. Even so, experience showed it impossible to make reliable forecasts of world rubber absorption in a period of months in the future. Unpredictable political, as well as economic, factors and changes in rubber-stocks policies in the principal consuming countries constituted disturbing influences. Proposals for buffer stocks were repeatedly considered but never adopted, although Professor van Gelderen, the Dutch delegate who was vice-chairman of the I.R.R.C., as well as of the International Tin Committee, until his death in 1938, was vice-chairman of the League of Nations Committee on Raw Materials (1937) and one of the two members who drew up its rather favorable memoran-

dum on buffer stocks.[6] A modest step in this direction, which came into very limited use late in 1938, permitted estates of one hundred acres and over to carry larger stocks than formerly, up to one-fourth of their allotted standard production.

The I.R.R.C.'s own review of its experience is marked by a good deal of candor and restrained enthusiasm. The scheme worked, though by no means perfectly. It was profitable to the estate producers and to the rubber-producing countries. It was least successful in preventing undesirable instability of prices, and one effort to promote a new use of rubber was thwarted thereby. It made little contribution to the long-run adjustment of capacity and supply to demand —especially difficult in the case of a commodity whose cost of production has tended downward and for which there are large potential demands. Relative prosperity under regulation gave the industry the financial means to experiment and, in a very limited way, to promote improved methods of cultivation. To that extent the I.R.R.C. is correct in asserting that control contributed to the industry's efficiency. However, by suspending competition, regulation also blunted the drive toward increased efficiency and obscured the need for it even when its achievement is painful. The industry's most striking improvements in efficiency came not under regulation but under conditions of free competition and distress.

As a matter of deliberate policy, the voting members of the I.R.R.C. were government representatives not primarily interested in rubber production, but these were mostly civil servants or diplomats amid a group of businessmen from producing and exporting companies. The committee pioneered in enlisting and encouraging the aid of proximate consumers of the regulated commodity. American rubber manufacturers were reasonably satisfied with the functioning of the I.R.R.C. but have continued opposed, in principle, to such regulation schemes.

After the outbreak of war in Europe, the I.R.R.C. continued to function with major modifications necessitated by war conditions. Between May, 1940, and December, 1941, it made four agreements with United States agencies (Reconstruction Finance Corporation and Rubber Reserve Corporation) for the building of special United States reserves of natural rubber. With the Japanese conquest of southeastern Asia, its role necessarily became largely passive. The subsequent great development of synthetic-rubber production in the United States and the indisposition of the American government to make firm commitments for the future of rubber control led to the formal termination of the I.R.R.A. on April 30, 1944. Since then, international discussions of current and future rubber problems have been conducted under the auspices of the British, Dutch, and American governments; and a Rubber Study Group, which France recently joined, has been canvassing the position and outlook.[7]

TEA

The Tea Regulation Scheme of 1933, unlike temporary expedients adopted in 1920 and 1930, was conceived as "a long term effort to meet a disastrous situation which could only be corrected over a period of years." Contrary to anticipa-

[6] Partially reprinted in I.L.O., *I.C.C.A.'s*, pp. 137–39.

[7] *Department of State Bulletin*, August 13, 1944, pp. 156–57; November 25, 1945, pp. 840, 872; and various intermediate issues.

tions expressed before its adoption, five years proved insufficient for this purpose. Indefinite continuation of regulation soon became the accepted doctrine, though successive renewals of the agreement were made for terms of years.

The International Tea Committee (I.T.C.) are well satisfied with the results achieved in eliminating losses, promoting improved efficiency, and securing greater stability in the tea industry and tea trade, without injury to any interest concerned. If critical students cannot completely indorse the committee's self-analysis, this I.C.A. can safely be called outstandingly successful from several viewpoints and open to less criticism than any other I.C.A. to date.[8] Yet it is not without objectionable potentialities.

International tea control has been distinctive in several respects. It was based on agreements among tea-producers' associations, with the blessing and backing of the governments concerned, rather than on intergovernmental agreements as such. Negotiations to convert it into an agreement among governments were interrupted by the progress of the war. Only British and Dutch interests participated, and only five governments were involved: India, Ceylon, and the Netherlands Indies and their mother-governments the United Kingdom and the Netherlands. Even in its latest form (1943) the tea agreement does not contemplate the addition of member-countries not producing tea, though it is contemplated that governments of tea-consuming countries might appoint an official observer to satisfy themselves that the control powers are being properly exercised. It authorizes the I.T.C., by unanimous vote, to admit other tea-growing countries on terms agreed upon. The members of the I.T.C. are appointed by the governments of the member-countries, but only one of the two to five members from each may be appointed without consultation with the tea growers of that country.

For numerous reasons, including the powerful backing of the principal tea-consuming country, Great Britain, tea proved especially amenable to such control. Neither competition from green-tea countries (China, Japan, and Formosa) nor expansion of black-tea production in nonparticipating countries has yet gone far enough to threaten breakdown of the control system under the moderate policies pursued.

The controlling body, the I.T.C., has had able leadership, has followed generally enlightened policies, has won and held the confidence of the tea trade, has materially improved available statistics, and has issued excellent reports. In the committee's view, which we are in no position to challenge, the rule of unanimity (virtually between the British and the Dutch governments) in its chief decisions has proved a source of strength—as it might not be in a body representing more countries. No high degree of stability of wholesale tea prices was accomplished or even sought, though price fluctuations in 1934–39 were naturally less marked than in the troubled years 1929–33. More stable conditions were enjoyed by tea-producing interests in the participating countries, apparently consistent with increased efficiency. Expansion of tea

[8] See I.L.O., *I.C.C.A.'s*, pp. 47–58 (the renewal agreement of 1943 is not available); International Tea Committee, *A Review of the Tea Regulation Scheme, 1933–1943* (London, 1943); and V. D. Wickizer, *Tea under International Regulation* ("Food Research Institute, Commodity Policy Studies," No. 4 [Stanford University, Calif., 1944]). In February, 1945, the I.T.C. circulated a mimeographed memorandum entitled "Notes on Mr. V. D. Wickizer's Book. . . ." The quotations in this and the following paragraphs are from these "Notes." These and later "Notes" are discussed in Wickizer's *Supplementary Comment* . . . . (August, 1945).

acreage there was held in check, but no notable readjustment of producing capacity was achieved.

The "disastrous situation" that led to inauguration of this I.C.A. was marked by depressed prices, which the regulation scheme was effectually designed to improve. The I.T.C. protest, however, that, "while necessarily noting the price tendencies," they had no price objectives in mind and that "price levels did not enter into the Committee's calculations at all." The only avowed exception was in 1941, when the committee "were disturbed by the extravagant levels to which the Calcutta market had been raised" and when "their efforts to check the upward rush of prices by increases in the release of tea were entirely unsuccessful." Apart from this, their consistent primary objective was "the necessity to make available adequate supplies for foreseeable demand and at all times of making the supply available anterior to and not following upon demand." This necessarily entailed more concern with tea prices and price levels than the committee are willing to admit, but the committee deserve credit for not pursuing an opportunistic price-boosting policy, as their tin contemporary did.

A complementary objective was to increase consumption in actual and potential markets, by promotional efforts that "supplemented, co-ordinated and extended the propaganda campaigns already in existence." Success attended these efforts to expand consumption in tea-producing countries, but not generally elsewhere. One highly important policy contributed to this result. Prices of tea for use within India were kept well below export prices, and even tended slightly downward in 1934–40, while export prices tended upward. This substantial price differential, coupled with the extensive advertising in India, goes far to explain the doubling of tea consumption in 1932–38 within the three chief producing countries. In 1940, when overseas demand was strong, the Calcutta export price averaged more than three times the Calcutta price for home use.

The basic regulation of exports by changing quotas was applied so as to insure "ample supplies for all purposes" but to "prevent the accumulation of unsaleable surpluses" in importing countries. Concomitant features were virtual prohibition of new planting in the participating countries, restrictions on current production, and prohibitions of exports of tea seed and slips except under license. The level of tea exports under regulation in 1933–39 was substantially lower than in the six years preceding, doubtless in large part for reasons independent of the control. The upward trend of exports from black-tea countries, which had broadly characterized the three decades ending in 1932, has not since been resumed.

The I.T.C. nevertheless insist that "the regulation scheme . . . . was not a 'restriction' scheme. . . . . It was not intended to have, nor did it in fact have, the disadvantages which must be inherent in a scheme which is purely restrictive in its application." Such protests reflect the high degree of sensitiveness of a control body to the charge of restrictiveness and also suggest the dangers of undiscriminating condemnation of any and all restrictions. In fact, however, no commodity-control scheme can be damned as "purely restrictive," while none has lacked restrictive features. While the I.T.C. is to be commended for its general attitude and policy, it is appropriate to add that the restrictions imposed warrant continued scrutiny with reference to their consistency

with guiding principles to be internationally agreed upon.

Ever since its inception in 1933, new plantings have been narrowly restricted in the principal participating countries. The I.T.C. recognizes the future problem of production control as bristling with difficulties. As sized up late in 1942, the world potential exportable production in 1939, under normal conditions, totaled 1,105,000,000 pounds, as compared with pre-war consumption of exported teas totaling 890,000,000 pounds. The "excess productive capacity," which the I.T.C. considered it conservative to put at 215,000,000 pounds, precisely equaled their aggregate estimate of potential production for export by British and East African colonies and nonregulated countries. Consumption is not likely to reach the pre-war rate for several years, but the Netherlands Indies may require a similar period before their output approaches the pre-war normal. India and Ceylon, however, showed during the war years that they were capable of producing well above their estimated normal production, and in time the teas of the nonregulated countries will once more seek international markets.

SUGAR, WHEAT, AND COFFEE I.C.A.'S

More comprehensive and ambitious but far less successful I.C.A.'s were adopted in the 1930's for sugar and wheat. Two of these were distinctive in including numerous net-importing countries along with net-exporting countries. A five-country interim agreement on wheat, replacing the short-lived one of 1933–34, became effective late in June, 1942; it has thus far proved of slight consequence. Very little of the elaborate Draft Convention, designed for submission to a more representative International Wheat Conference, has been brought into force. Late in 1940, under the influence of wartime conditions, the United States concluded a coffee agreement with the fourteen Latin-American coffee-producing countries; this has virtually ceased to be operative since VJ-Day. The outbreak of war in September, 1939, interrupted efforts to formulate an I.C.A. among cotton-exporting countries; these were resumed in the spring of 1945, but suspended late in February, 1946, without significant results. These four agricultural products are often—though by no means accurately—spoken of as characterized by "chronic surplus." In all cases, it is worthy of note, governmental policies in one or more countries have been primarily responsible for recurrent or persistent surpluses.

SUGAR

One of the most important I.C.A.'s before World War I was the (Brussels) Sugar Convention of March 5, 1902, which was nominally in effect for seventeen years after September 1, 1903. It was designed to curb a seriously objectionable practice in international competition. All the principal beet-sugar-producing countries except Russia (which adhered with reservations in 1908) agreed to abandon export and production bounties on beet sugar, which had been carried to gross excess, and to penalize or prohibit imports of "bounty-fed" sugar from nonparticipating countries.[9] This convention is said to have been "the first to give an international

[9] References to this and earlier agreements relating to drawbacks and bounties on sugar are given in I.L.O., *I.C.C.A.'s*, p. 26 n. On the Brussels Convention, see also H. C. Prinsen-Geerligs, *The World's Cane Sugar Industry, Past and Present* (Manchester, 1912), pp. 34 ff., 371–77, and its supplement, H. C. and R. J. Prinsen-Geerligs, *Cane Sugar Production, 1912–1937* (London, 1938), pp. 16–18; and Jacob Viner, *Dumping: A Problem in International Trade* (Chicago, 1923), pp. 178–86.

committee power to dictate policy"[10]—though this statement implies too much. For a few years, amid many difficulties, it achieved its purpose. Even before World War I, however, the execution of the agreement was weakened; and under the pressures of war and protectionist policies it became largely inoperative several years before it was dissolved in 1920."

Two quite different I.C.A.'s for sugar were adopted between the two world wars: (1) the Chadbourne Agreement among sugar-producers' associations in seven sugar-exporting countries, which was signed on May 9, 1931, and broke down before it formally expired on May 31, 1935, and (2) the International Sugar Agreement among twenty-one exporting and importing countries, which was signed on May 6, 1937, and is still nominally in effect. In both instances the administrative body was called the "International Sugar Council."

The Chadbourne Agreement, though not intergovernmental in form, initially had the support of the governments of the participating countries: Cuba, Java, Germany, Belgium, Czechoslovakia, Hungary, Poland, and eventually Peru and Yugoslavia also. By drastic export and production restrictions, not only under the agreement but supplementary to it, most of the surplus sugar stocks in the participating countries were worked off. The more fundamental objective of raising depressed sugar prices to remunerative levels was not attained. Further declines in most series of sugar prices occurred in 1932, and sharp fluctuations continued in several markets in 1933 and 1934. London wholesale prices of raw sugar, in terms of sterling and United States currency, were below the 1931 average until early in 1937 and again through most of 1938. The guilder price of sugar in Java, until 1939, averaged lower than in 1931. It was not until the middle of 1934 that Cuban raw-sugar prices, in terms of depreciated United States currency, ruled consistently above their 1931 average. Cuban sugar prices were actually higher in the interval between the two agreements than under either agreement.

During 1931–35, moreover, sugar production outside the Chadbourne countries was expanded, notably in India and the Japanese empire, formerly large importers from Java, and in the United States and its overseas sugar territories, thus leading to reduced American imports from Cuba. For Java and Cuba, the two lowest-cost producing countries, the consequences of this outside expansion were disastrous, because their volume of exports was greatly reduced, while their export prices remained below levels considered remunerative, despite their low production costs.

The International Sugar Agreement of 1937 was not merely a fresh attempt to achieve success where the Chadbourne plan had failed. It was the most matured product of thought and efforts on I.C.A.'s that were intensified during the great depression and forwarded by the abortive World Monetary and Economic Conference of 1933. Its signatory countries produced 85–90 per cent of the world's sug-

[10] L. A. Mander, *Foundations of Modern World Society* (Stanford University, Calif., 1941), p. 237.

[11] Of the same general nature as the Brussels Sugar Convention of 1902, though of negligible importance, was an international agreement on hides, skins, and bones, effective in October, 1929, under which eighteen states jointly renounced export prohibitions and accepted limitations on export duties on these products (see League of Nations, Economic, Financial and Transit Department, *Commercial Policy in the Interwar Period: International Proposals and National Policies, 1942* [Geneva, 1942], p. 35). Of experience under this I have been able to get no evidence.

ar, as compared with about 40 per cent in the Chadbourne agreement.

The International Sugar Conference that convened in London on April 5, 1937, was called only after "careful exploration" gave reasonable assurance that "absolute barriers" to reaching an agreement no longer existed. This conference was summoned by Prime Minister Ramsay Macdonald, "on the instruction" of Dr. H. Colijn, Netherlands Minister of Colonies and president of the Economic Commission "to whom the Bureau of the World Monetary and Economic Conference had entrusted the prosecution of certain economic questions." In opening the conference, from whose month's work in London the new agreement emerged, Mr. Macdonald said:

> We are met to consider whether something can be done towards removing the troubles which have beset the world's sugar producers for many years. To-day, the position is much better than it was, say four years ago; production has been brought to a reasonable relation with consumption; stocks have been reduced to manageable proportions and world prices have apparently, for the first time for many years, taken a definite upward turn in the last few months. But production in some of the greatest sugar-producing countries remains at only about 50% of its former level. In many others, production has been sustained only by special measures of assistance which remain a heavy burden on Government finances or on sugar consumers. There still is in the world a capacity to produce far in excess of present demand. The improved world price is still only just remunerative to the cheapest producers and, while unused capacity exists and is ready at any moment to be freed, there can be no security of obtaining even that modest return.
>
> Many of the past difficulties of the industry have been due to lack of certainty as to what world production was going to be, and a failure to co-ordinate the sugar policies of different countries. It seems to me therefore that perhaps the best service that can be rendered now to the world's sugar industry is to give it some assurance of stability and order. That, I think, should be the fundamental object of an Agreement.
>
> It is owing to the decisive influence of State action that this Conference is composed of delegates of Governments not of the producers themselves. Too many factors are involved for the terms of an effective sugar regulation agreement to be settled by producers alone. It is necessary to add to a mere regulation of supplies some provisions designed to prevent disturbance by further unco-ordinated Government intervention.
>
> But, while we are aiming primarily at safeguarding producers against disastrously low prices, we have to remember the interests of consumers. The United Kingdom is itself a very large consumer and we are naturally not in favour of anything being done to raise prices above a just economic level. We seek to bring order into the industry so as to be fair to both producers and consumers. In considering this problem, we should not forget that, to-day, consumption is kept down in some countries by the maintenance of high retail prices.[12]

The resulting sugar agreement[13] was extremely detailed and in many respects very ambitious, but it contained no provisions enabling the International Sugar Council to go to the heart of the world sugar problem—nationalistic measures promoting high-cost production and restriction of sugar consumption in many countries. It merely "aimed at equating the exports of cheap sugar to the import demands limited by the protection granted to high-cost producers."[14] The two years before war came upon Europe were too short for adequate test of its limited potentialities.

[12] League of Nations, *International Sugar Conference* (Geneva, October 27, 1937), p. 26. This document is one of the best in the whole field of I.C.A.'s and could well be taken as a model for reports on similar conferences. Unfortunately, nothing like it is available for other conferences that either led to I.C.A.'s or failed to do so. By comparison, the published report of the Washington Wheat Meeting of 1941–42 is disappointingly meager.

[13] I.L.O., *I.C.C.A.'s*, pp. 26–45. For further background see also *Foreign Agriculture* (U.S. Department of Agriculture, June, 1937), I, 299–310.

[14] *Economist* (London), June 16, 1945, p. 818.

Ratification by all the signatory countries was not effected by September 1, 1937, as had been expected. Only six, indeed, had deposited ratifications by that date, but thirteen more did so in the next ten months. Three—China, France, and Yugoslavia—never did ratify. Formal differences arose over bringing the agreement into legal force among those which had ratified it. On July 22,1942, when it was about to expire, it was agreed by fifteen governments (excluding the signatories Germany, Hungary, Poland, and India, but including the Philippines) that the agreement "shall be regarded as having come into force" in respect of these governments on September 1, 1937, and that it should continue in force through August 31, 1944.[15] Its formal existence was later extended for one year,[16] but under war conditions its existence was essentially nominal. Its present legal status is unclear, but presumably it will be revived in due course.

In its initial period the International Sugar Council lacked a solid foundation for its existence. Its powers with respect to changes in what proved excessive basic quotas were limited in any case. An able Dutch participant in this and other I.C.A.'s, the late G. H. C. Hart, nevertheless asserted that the sugar agreement "proved of great importance" from its signature until World War II broke out, and even afterward.[17] Protracted discussions among representatives of the ratifying countries yielded decisions by which export regulation was carried out. At best, however, the operations did not prevent further recessions in sugar prices, and the agreement made no demonstrable contribution toward price recovery or a sound readjustment in world sugar production.[18]

WHEAT

An International Wheat Agreement was signed in London in the summer of 1933, after a series of conferences initiated before the World Monetary and Economic Conference convened and continued beyond its end. Of the twenty-two signatory exporting and importing countries, all but one (Eire) ratified with or without reservations.[19] Export-quota restrictions were agreed to, but no effective machinery for enforcement was created. Although total exports in the first year (1933–34) fell short of the aggregate quota, Argentina's exports moderately exceeded her quota. Her crop greatly exceeded forecasts made in the summer of 1933, as did European wheat production. The Argentine minister of agriculture who had favored the agreement died, and his successor was cold toward it. Efforts to get quotas readjusted were unavailing. Argentine spokesmen plausibly argued that North American producers had failed to fulfil badly worded commitments to reduce their wheat acreage for 1934. Inability to reach agreement within the international Wheat Advisory Committee forced virtual suspension of the scheme after the initial season.

The signatory net-importing countries under the 1933 agreement made several

[15] I.L.O., *I.C.C.A.'s*, pp. 45–46.

[16] *Department of State Bulletin*, October 29, 1944, p. 526; April 29, 1945, p. 836.

[17] G. H. C. Hart, *Towards Economic Democracy in the Netherlands Indies* ([New York]: Netherlands and Netherlands East Indies Council, Institute of Pacific Relations, 1942), p. 117.

[18] Cf. P. Lamartine Yates, *Commodity Control: A Study of Primary Products* (London, 1943), chap. iii.

[19] The twin agreements and certain reservations are given in I.L.O., *I.C.C.A.'s*, pp. 1–10. The experience is analyzed in J. S. Davis, *Wheat and the AAA* (Washington, D.C.: Brookings Institution, 1935), pp. 303–43, 416–17; and more briefly in J. S. Davis, *New International Wheat Agreements* ("Wheat Studies of the Food Research Institute," Vol. XIX [Stanford University, Calif., November, 1942]), p. 26.

promising commitments. In particular, they undertook to lower their wheat-import duties when a selected basic price had ranged for sixteen weeks above 63 gold cents per bushel. Actually, despite the near approach to the planned compliance with export restrictions, wheat prices declined instead of rising; hence this commitment did not become effective. The others led to no significant actions. The production-control provisions also were given no real test. A succession of short wheat crops in 1934–36, due to low yields, permitted absorption of surplus stocks and eventually marked advances in prices.

The Wheat Advisory Committee survived the demise of the scheme and kept alive the possibility of a new and tighter international agreement, including minimum-price provisions. Negotiations to this end were in active progress in 1938–39, after the bumper world crop of 1938 had reconstituted a world wheat surplus. War broke out before these had reached their final stage. In 1941–42 they were resumed in Washington among five allied and neutral countries with major interests in wheat.

These negotiations eventually resulted in an elaborate Draft Convention intended for submission to a subsequent general International Wheat Conference, and in an interim agreement, effective June 27, 1942, among the five governments whose representatives participated in the Washington wheat meeting: the United Kingdom, Canada, Argentina, Australia, and the United States.[20] The Draft Convention called for an extremely ambitious I.C.A. The interim agreement brought a little of it into effect.

[20] Reprinted in I.L.O., *I.C.C.A.'s*, pp. 10–25, and analyzed in Davis, *New International Wheat Agreements*, pp. 25–84.

The Wheat Advisory Committee, though not yet formally terminated, was in effect replaced by an International Wheat Council, with its seat in Washington for the time being.[21] It has met at least twice a year since August, 1942, and its Executive Committee has met more frequently. In the absence of annual reports, which the council has chosen not to publish (despite specific provision to this effect), it is difficult to evaluate actions that may have been taken, particularly along the lines of influencing the direction of national policy in the respective countries; but evidence of any significant influence is lacking. With the cessation of hostilities, the council was faced with a number of problems that put the interim agreement to a test. Thus far (March 1, 1946), it has been found wanting. In default of anticipated agreement on schedules of maximum and minimum prices, individual wheat-exporting nations are determining their own prices. Most of the wheat for relief is being handled without obvious reference to the agreement. No appreciable co-ordination of production and export policies has been undertaken, except in limited degree through the Combined Food Board. The International Wheat Council seems impotent. If and when an International Wheat Conference is called, it may well view with favor an agreement very different from that presented in the 1942 Draft Convention.

COFFEE

The Inter-American Coffee Agreement (1940) was born of wartime

[21] On this paragraph see J. S. Davis, *Wheat under International Agreement* (American Enterprise Association, "National Economic Problems," No. 410 [New York, (April), 1945]); and Dominion Bureau of Statistics, *Monthly Review of the Wheat Situation*, XVI, No. 2 (October, 1945), 1–3.

economics and high politics.[22] In the preceding quarter-century, Brazil had conducted several coffee "valorization" and "defense" operations. These involved holding back coffee when surplus supplies depressed prices, releasing stocks after price recovery, and eventually huge destruction of surplus stocks (at the peak in 1937, over seventeen million bags were destroyed) without eliminating the incubus. Under this Brazilian policy, competing coffee-producing countries expanded their production and their share of the world market at Brazil's expense. Several Brazilian efforts to get an I.C.A. for coffee failed; but, in consequence of a resolution of the First Pan-American Coffee Conference at Bogotá in October, 1936, eight of the more important producing countries jointly established a Pan-American Coffee Bureau in New York City. Early in November, 1937, Brazil undertook to regain her former share of the world market by selling her coffees for what they would bring. In the ensuing "coffee war," Brazilian coffee sold at heavy price discounts, the larger because in the period of restricted Brazilian exports the coffee trade and consumers had developed their preferences for other coffees of the "mild" types, in which Colombia led. Nevertheless, the international coffee situation was in a fair way to readjustment when war developments created serious new problems.

In the first few months after Germany invaded Poland, prices of mild coffees fell sharply. They fell still lower, and Brazilian prices weakened further, after the German invasion of the Low Countries in the spring of 1940. With the fall of France, the loss of Continental European markets, which normally accounted for 40 per cent of the world absorption, threatened further price declines below the very low levels reached in the summer of 1940. The international situation was so dangerous that the United States took active steps to promote Pan-American political solidarity and to strengthen the economic position of Latin-American nations. Following a series of conferences in June–November, 1940, an Inter-American Coffee Agreement (I.A.C.A.) was signed by the United States and fourteen Latin-American coffee-producing countries. After receipt of essential ratifications and the passage of supporting legislation in the United States, this went into effect April 16, 1941, and was made retroactive to October 1, 1940.

The central feature of the I.A.C.A. was a system of export quotas, for which basic schedules were agreed upon after negotiation and compromise. The only ones that have had practical significance were the individual-country quotas for export to the United States—normally the consumer of over half the world's coffee—which the United States agreed to enforce by import controls. The administering body, the Inter-American Coffee Board, was set up in April, 1941, with its seat in Washington and the American member as chairman. The board was empowered to fix and alter export quotas within prescribed limits. The coffee-exporting countries were interested in having these export quotas fixed in order that cutthroat competition should be prevented and that American coffee prices should rise to profitable levels; and the United States, in effect, indicated its willingness to facilitate such rise in the interest of inter-American solidarity.

[22] See I.L.O., *I.C.C.A.'s*, pp. 59–68; and V. D. Wickizer, *The World Coffee Economy, with Special Reference to Control Schemes* ("Food Research Institute, Commodity Policy Studies," No. 2 [Stanford University, Calif., 1943]).

Speculative activity, strongly reinforced by rising minimum export prices set by Colombia (which had shrewdly accepted an export quota to the United States that was low compared to her recent exports) even before the agreement was formally ratified, raised coffee prices sharply. Representative import prices in New York roughly doubled between August, 1940, and August, 1941, moving from the lowest prices in a decade to the highest.[23] Late in May, 1941, the board raised the United States quotas by 5 per cent and, to permit speeding-up of imports threatened by impending scarcity of shipping, authorized exports of additional amounts not to be entered for consumption until after October 1. At the board meeting in July, the American chairman stated that further increases in coffee prices were unwarranted under present conditions; and in August the United States exercised its right to declare an emergency[24] and increased quotas by 20 per cent. These moves effectually prevented further price advances and resulted in prices receding slightly from the peaks of the summer months.

Shortly after the Pearl Harbor attack, the Office of Price Administration established price ceilings for green coffees at about the levels then current. This schedule was revised on December 29, 1941, and further amended and expanded in August, 1942. By and large, however, the ceilings of December, 1941, were adhered to until mid-November, 1945, despite vigorous and persistent efforts on the part of the coffee-producing countries, especially in 1944 and 1945, to get them raised.[25]

In April, 1942, shrinking stocks of imported coffee due to shipping shortages forced the imposition of restrictions on coffee distribution in the United States, and the Coffee Board removed all restrictions on coffee shipments to the United States for storage here. Another emergency increase in coffee quotas was made in July. The Commodity Credit Corporation arranged to absorb certain wartime costs of coffee imports, to avert a "squeeze" on the American coffee industry. Additional restrictions imposed by the War Production Board, effective September 1, cut distributors' allotments to 65 per cent of their average handlings in the corresponding quarter of 1941. For eight months after November 29, 1942, coffee was rationed as a means of securing rational distribution of a supply limited by shipping facilities. In this troubled period the board served as a useful international consulting body; but the quota changes that it made were designed mainly to prevent the quotas from restricting imports, and most of the difficult problems that arose were handled by other agencies. These included American official commitments to purchase portions of Brazil's quotas for 1941–42 and 1942–43 that remained unshipped

[23] Eurico Penteado, Brazilian member of the Coffee Board and chairman of the Board of Directors of the Pan-American Coffee Bureau, said of this in a review of "The Facts on the Coffee Situation," *Tea and Coffee Trade Journal* (New York), LXXXVII (December, 1944), 18*b–c:* "The coffee market slowly recovered and prices reacted in a healthy manner until they reached, late in 1941, a level which was then acceptable or even satisfactory *when compared to the* disastrous depths to which they had fallen in 1940."

[24] Under Art. VIII of the Agreement, the United States could outvote the producing countries at any time if it considered a shortage of supplies imminent in the United States. Otherwise, quota changes could be made in amounts not greater than 5 per cent and not oftener than once every six months.

[25] Penteado, "The Facts on the Coffee Situation," *op. cit.: Department of State Bulletin*, March 25, 1945, pp. 512–13; and *Coffee* (New York), IV, No. 4 (April, 1945), 3, and No. 9 (September, 1945), 2–24. Such efforts were natural in view of notable inflation of prices and wages in Latin-American countries, coupled with maintenance of dollar-exchange rates.

for lack of tonnage, but no complete official report of actual purchases has been published.

The I.A.C.A. was renewed, without change, for two one-year periods from the initial expiration date of October 1, 1943. Since its formulation late in 1940, a number of factors in the world coffee situation have changed radically. The export-quota system, which was the principal device utilized by the Coffee Board, proved inadequate to the demands upon it. Most of the adaptations to wartime changes have been made, not by the board, but outside the agreement. The repeated renewal of the I.A.C.A. appears to reflect inertia in the face of obstacles to appropriate evolution of the agreement rather than perfection of the original instrument.

Chiefly because of the initial price advance that it facilitated, the I.A.C.A. has frequently been termed a great success, especially by the coffee-producing countries, sometimes in even more glowing terms as "a fair, wise and effective model of business arrangement . . . . the master plan for Inter-American economic defense and integration."[26] It undoubtedly promoted inter-American political solidarity in a critical period and contributed to marked improvement in Latin-American financial strength during the war. Since late in 1941 it has not been allowed to prevent expansion in United States coffee imports to the extent that shipping and ceiling prices have permitted. The United States has exercised virtual veto rights over measures that would lead to higher coffee prices in the face of what are still large government stocks in Brazil. The Coffee Board has proceeded in consultation with the American coffee trade and has served useful purposes for international coffee discussions.

The principal beneficiaries of the agreement have latterly tended to deny that it has continued to achieve its avowed objective of "assuring terms of trade equitable for both producers and consumers by adjusting the supply to demand." It does not appear to have sufficed to provide, as the American State Department's initial release put it, "effective measures for bringing supplies of coffee in the international markets more nearly in line with existing demand at prices which will be reasonable to both producers and consumers." The Coffee Board has issued only two annual reports, covering the first three quota years, ending October 1, 1943. The statistical basis for intelligent operations continues imperfect,[27] and estimates of Brazilian government stocks vary widely. Fundamental problems of readjustment in the world coffee situation, and even matters important in the war-peace transition, have thus far apparently received wholly inadequate consideration, even though smaller Brazilian crops and the reduction of surplus coffee stocks have made some of the issues seem less urgent than they did.

These facts were wisely, if belatedly, recognized in the Coffee Board's resolution of June 15, 1945, in which the board recommended renewal of the I.A.C.A. for one year from October 1, 1945, on the following conditions:

(a) That the quota provisions of the agreement be inoperative except under emergency

[26] Carlos Davila, former Chilean ambassador to the United States, in *Tea and Coffee Trade Journal*, LXXXVII (December, 1944), 30, 36.

[27] At the Fourth Pan-American Coffee Conference, held in Mexico City, September 1–14, 1945, important moves were made toward standardization and improvement designed to dispel "the fog and confusion that . . . . have been typical of all coffee statistics" (*The Statistical Coffee Picture* [monthly suppl. to *Coffee*], September, 1945).

conditions when they might be placed in operation by 95 per cent of the board; (*b*) That the Board undertake during the renewal period to prepare a thorough analysis of the world coffee situation and formulate recommendations for the consideration of the governments now participating in the revised agreement, regarding the type of intelligent co-operation that appears most likely to contribute to the development of sound, prosperous conditions in international trade in coffee.

Adoption of this recommendation would have left the Coffee Board largely a consulting body, as, indeed, it had been since the great enlargement of coffee quotas in 1942–43. Representatives of nine member-countries signed a renewal protocol on October 2. Pending similar action by the other six, the I.A.C.A. is apparently no longer in legal effect, though not beyond resuscitation. Judging from resolutions at the Fourth Pan-American Coffee Conference held in Mexico City in September, 1945, the Latin-American coffee producers now look rather to intensified efforts by the Pan-American Coffee Bureau of New York, of which the United States is not a member; but the United States has not acquiesced in thus circumventing the Coffee Board.

On November 17, 1945, Stabilization Director Collet authorized a 3-cent increase in the ceiling prices of green coffee, from November 19 to March 31, 1946, on a maximum of 6,000,000 bags, in order "to avoid a critical shortage of coffee during the coming winter." The cost, about $24,000,000, is being met by a subsidy paid by the Reconstruction Finance Corporation.[28] This concession was not well received in the coffee-producing countries, which continue to insist that wartime advances in production costs justify much greater advances or removing the price ceilings entirely. But on March 19 the arrangement was extended to cover an additional 7,500,000 bags to be landed in the United States not later than June 30, 1946.

[28] *New York Times*, November 18, 1945, p. 35.

MISCELLANEOUS I.C.A.'S

In addition to the I.C.A.'s for the six important staples of international trade already discussed, a variety of others have dealt with marine resources, narcotic drugs, silver, lumber, beef, wool, and petroleum. The last two, promulgated as recently as September, 1945, are potentially the most important.

MARINE RESOURCES

Several I.C.A.'s have had as their primary objectives curbing depletion and promoting replenishment of certain marine resources and eliminating international friction over their exploitation.[29] These agreements are noteworthy because of the extent to which they have rested upon extensive scientific investigations, which have not yet been supplemented by needed economic studies.

The earliest and least important of these conservation agreements, but the longest lived and most successful, was a convention for the preservation and protection of fur seals (and sea otters) in the northern Pacific, between the United States, Great Britain, Russia, and Japan. This went into effect December 15, 1911, and lasted for thirty years. Canada, in fact though not in form, virtually succeeded Britain as a party. Since the revolution of 1917, Russia has been a passive participant.

This I.C.A. was the outgrowth of repeated scientific investigations, national actions, and international conferences

[29] These are discussed in Jozo Tomasevich, *International Agreements on Conservation of Marine Resources* ("Food Research Institute, Commodity Policy Studies," No. 1 [Stanford University, Calif., 1943]).

during a fifteen-year period, in which uneconomic exploitation of fur seals led to drastic depletion of the herds and gave rise to disturbing international incidents. Under this agreement, pelagic sealing, which had been chiefly responsible for depleting the fur-seal herds, was ended. The United States government regulated and virtually monopolized the killing of fur seals on the Pribilof Islands, the chief breeding center, and shared the skins with Canada and Japan. Russia and Japan made similar commitments regarding operations on the Commander and Robben Islands, respectively. The operations were managed in such a way that the Pribilof seal herd increased more than tenfold between 1912 and 1941, and the take of sealskins was gradually stepped up as the herd approached optimum size.

About a year before Pearl Harbor, Japan gave notice of her intention to withdraw from the convention, plausibly alleging that the convention was obsolete and that the fur-seal herd had grown too large and was injuring her fishing industry; but she declared her loyalty to its objectives and willingness to conclude a new agreement. The convention formally expired October 23, 1941, a few weeks before war conditions would have interrupted its operation. Until a revised convention can be adopted, the gap is effectually bridged by a provisional agreement between the United States and Canada. This was negotiated in December, 1942; entered into force May 30, 1944; and was declared retroactively effective from June 1, 1942.[30]

More important, and worthy of mention although they involved only two countries, are American-Canadian agreements relative to the northern Pacific halibut fishery. Under a 1923 agreement a joint International Fisheries Commission was set up with instructions to investigate and recommend but with no power to regulate. Its work provided a sound basis for a new treaty, signed in May, 1930, and effective a year later, which, in July, 1937, was replaced by a slightly modified agreement. Beginning in February, 1932, the commission laid down rules under which halibut fishing could be done and set maximum annual quotas for the catch in specified areas. In addition, with the concurrence of the commission, the American and Canadian halibut-fishing industries exercised more detailed controls over the conduct of their operations. Both types of control are regarded as so successful as to warrant continuation.

In 1930 an American-Canadian investigatory agreement broadly similar to the halibut treaty of 1923 was signed to cover the Fraser River sockeye-salmon fishery, and it will presumably be followed by one providing for control procedures.

Whaling has been the subject of investigations by the International Council for the Exploration of the Sea, established in 1902 with its seat at Copenhagen, and by British, Norwegian, German, and League of Nations bodies. The Norwegians led in regulative measures in 1929 and later. The first International Convention for the Regulation of Whaling (1931) was originally signed by twenty-six nations. It became effective January 16, 1935, after Norway and the United Kingdom—the two outstanding whaling countries—and six others had deposited their ratifications. Nonsigners included Japan, Soviet Russia, Chile, and Argentina. Those which signed but failed to ratify included Germany and several countries with negligible whaling

[30] *Department of State Bulletin*, March 4, 1944, pp. 230–31; and June 17, 1944, p. 568.

interests. Germany and Japan were important outsiders, because they cherished ambitions to become major whaling nations. Before this moderate agreement came into force, Norwegian and British whaling interests operated under cartel agreements limiting their catch by quotas, successfully in 1932–33 and 1933–34 and unsuccessfully in 1935–36, when German and Japanese competition had become severe.[31]

A second Agreement for the Regulation of Whaling was concluded on June 8, 1937. The nine participating countries included Germany and Argentina, as well as Norway, the United Kingdom, four British Dominions, and the United States, but not Japan. It imposed somewhat more stringent restrictions than the earlier agreement but afforded quite insufficient protection for whales. This agreement was amended and extended at a further conference in London in June, 1938.

World War II interrupted whaling operations for a period long enough to permit marked replenishment of the stock. Anticipating large-scale resumption of whaling within a year or two, representatives of Great Britain, Norway, four British Dominions, and the United States signed, on February 7, 1944, a new protocol on pelagic whaling. Interpreting the operation of the earlier agreement as merely interrupted by the war, the new protocol chiefly made special provisions applicable to "the first season in which whaling operations are resumed."[32] It fixed definite limits to the catch in Antarctic waters, the principal whaling ground. Norway, Britain, and the United States ratified by July, 1944, Canada and New Zealand subsequently, and Mexico also acceded. But Eire, one of the seven nations named in the protocol as an essential party, neither signed nor ratified. In an effort to permit the agreement nevertheless to become operative for the 1945–46 whaling season, a new protocol was signed by representatives of the six adherents on October 5, 1945.[33] A similar protocol covering the 1946–47 whaling season was signed on November 26, 1945.

NARCOTIC DRUGS

Another series of international conventions, in which the United States has evinced most active interest, has aimed to subject international trade in narcotic drugs, and even their manufacture, to restrictions that would curb the serious abuses to which they are subject.[34] The first of these I.C.A.'s was an International Opium Convention signed at The Hague in January, 1912, following the first international conference on the subject at Shanghai in 1909. This laid the basis of regulation but provided no effective control machinery. Because of delays in ratifications it was ineffective until after World War I. Under the auspices of the League of Nations, additional agreements were adopted in 1925, 1931, and 1936.

Under these conventions, a sort of international drug administration was set up, comprising an Advisory Committee, a Drug Supervisory Body, and a Perma-

[31] Karl Brandt, *Whale Oil: An Economic Analysis* ("Food Research Institute, Fats and Oils Studies," No. 7 [Stanford University, Calif., 1940]), pp. 89–105; Tomasevich, *op. cit.*, pp. 279–88, and other references therein cited.

[32] *Department of State Bulletin*, June 24, 1944, pp. 592–93.

[33] *Ibid.*, November 25, 1945, p. 872. Australia and South Africa had signed but not yet ratified.

[34] Among the many useful brief discussions of this problem see *Foreign Policy Reports* (New York: Foreign Policy Association, May 1, 1943), pp. 41–42; and *Department of State Bulletin*, July 9, 1944, pp. 47–51, June 3, 1945, pp. 1031–32, and October 14, 1945, pp. 570–74.

nent Central Opium Board. The committee is a policy-making body that exercises general control. The supervisory body examines national estimates and makes an annual statement of world requirements for medicinal uses. The board follows the reported movement of narcotic drugs, checks this with the schedule of requirements, and notifies the parties of the situation so that they may fulfil their obligation to embargo exports to the country whose imports have exceeded the approved estimate. The system has worked but has thus far proved inadequate to achieve its objectives. Repeated efforts are made to find ways to reinforce and supplement the existing controls, and further conferences and agreements in this field are to be anticipated.

SILVER

The London Silver Agreement (1933) is an example of a politico-economic deal to boost the price of silver.[35] It was the outgrowth of persistent and successful efforts of silver-mining interests in the United States, through the powerful "silver bloc" in Congress, headed by the late Senator Key Pittman, of Nevada.

In the American political campaign of 1932, both party platforms included planks pledging participation by the United States in an international monetary conference at which silver questions would be considered—the Democratic platform used the phrase "the rehabilitation of silver." Both presidential candidates were impelled to go further in the course of the campaign. Senator Pittman, the new chairman of the Senate Committee on Foreign Relations, was one of the American delegates to the World Monetary and Economic Conference. He won in advance the support of the American delegation for proposals embodied in a resolution that he introduced at the conference on June 19, 1933. A month later the Silver Subcommittee to which this resolution was committed adopted a more restricted draft resolution, recommending an agreement among the chief countries interested in silver. Despite a cool reception from many delegations, this recommendation was included in the report of the Monetary and Finance Commission. Its report was adopted by the full conference on July 27, with a proviso that such agreement be completed by April 1, 1934.

On July 22 it became known that a Memorandum of Agreement had been initialed by representatives of five silver-producing countries and three silver-using countries. India and Spain agreed to limit their sales of demonetized silver in the four years 1934–37 to averages of 35,000,000 and 5,000,000 ounces troy per annum, respectively—figures never before reached. An Indian reservation also permitted the sale of silver for transfer to the United States in payment of war debts, which was later done. China, which agreed to make no sales of demonetized silver, eventually ratified with a reservation under which she subsequently sold large amounts. The five silver-producing countries, in turn, agreed to buy a total of 35,000,000 ounces per annum. Under a supplementary Allotment Agreement announced on July 29, the United States agreed to buy about 70 per cent of this total, approximately the quantity that American mines had pro-

[35] The agreement is U.S. Department of State, *Executive Agreement Series No. 63* (Pub. No. 613). This was excluded from the documents in I.L.O., *I.C.C.A.'s*, on the questionable ground that "it was more closely related to monetary than to commodity control policy" (p. xv). For discussions of the agreement and its outcome see H. M. Bratter, "The Silver Episode," *Journal of Political Economy*, XLVI (October and December, 1938), 609–52, 802–37; and Handy and Harman's *Annual Review of the Silver Market* (New York, 1933——).

duced in 1932; Mexico about 7.16 million ounces; and Canada, Peru, and Australia specified portions of the balance.

Up to March 21, 1934, only the United States and Australia had completed ratification. India, Mexico, and Canada did so within the next week. The time was subsequently extended one month. Even so, it was only by accepting receipt of notice of affirmative action in lieu of formal deposit of ratification that China, Spain, and Peru could be held to have ratified by May 1; and the formal ratification by China, deposited on May 14, contained a major reservation designed to enable her to abandon the silver standard as she was later compelled to do.

The purchases under the agreement were duly made, and after the end of the four-year period the United States purchased the Mexican government's full accumulation, giving Mexico a 9-cent profit. The chief beneficiaries were Mexican silver producers, India as a seller of demonetized silver, and most particularly the handful of American silver producers and their employees, at the expense of the United States Treasury. President Roosevelt's proclamation ratifying the agreement, December 21, 1933, assured United States silver producers to the end of 1937 a price of about 64½ cents an ounce on their full output. This compared with the New York market price of 28 cents in 1932, 34 cents in May, 1933, and 43 cents in November, 1933.

None of the glowing promises made by the silver advocates were fulfilled. The agreement promoted speculation in silver, further pressures from silver-mining interests, and the passage of the Silver Purchase Act of 1934 as a further concession to their demands. When the agreement expired, no effort was made to renew it. Whatever need there may be for an I.C.A. on silver that would genuinely serve the interest of the world economy, no opportunity to reach it will be possible so long as small pressure groups can dominate its formulation.

LUMBER

An international agreement among softwood-lumber exporters was operative in Europe for nearly four years preceding World War II, with the sympathy and support of the governments of nine countries. It evolved out of the disastrous situations that arose in the great depression.[36]

In the first decade after World War I, the European lumber trade underwent major changes. Reconstruction requirements were heavy. Russia, formerly the outstanding exporter, ceased for a time to be a factor, and exports from the Soviet Union only gradually expanded. Exports from the new states of central and eastern Europe, in some instances stimulated by currency depreciation, rose above levels that prudent cutting warranted. The new trade structure collapsed in 1929–32, when deepening general depression reduced building activity; Soviet Russia greatly enlarged her exports; and the London price of softwood lumber fell within three years from $80 to $30 per thousand board feet.

The League of Nations Economic Committee convened a conference of timber experts from the principal lumber-importing and -exporting countries in Geneva in April, 1932. Though an in-

[36] See Egon Glesinger, *Le Bois en Europe* (Paris, 1932); various issues of the *Economist;* F. Arcoleo, "The Organization of the International Timber Market," *International Review of Agriculture,* XXVII (Rome: International Institute of Agriculture, February, 1936), 41–49*E;* Egon Glesinger, "Forest Products in a World Economy," *American Economic Review, Supplement,* XXV (May, 1945), 120–29; and *Third Report . . . . by the Interim Commission on Food and Agriculture* (Washington, D.C., April 25, 1945), pp. 26–30.

ternational agreement was discussed, lack of data and divisions of opinion prevented action. This meeting led chiefly to proposals that the International Institute of Agriculture study the problem and assemble materials on it. A conference was held in Vienna in June, 1932, sponsored by Austria, Poland, Czechoslovakia, Rumania, and Yugoslavia, and attended by representatives of other net-exporting and net-importing countries. This set up the Comité International du Bois (C.I.B.), a semiofficial body initially designed to develop an adequate statistical service and to study trade problems. Its members were initially chosen from the exporting organizations of the five countries just named, Latvia, and, in 1933, France as well; but eventually the representatives fell into three groups: governments, official trade-associations, and private trade-associations. Several additional countries later affiliated with it, but Germany started a rival organization.

The C.I.B. soon sought to organize international lumber co-operation, on a nongovernmental basis after discussions at the World Monetary and Financial Conference came to naught. In December, 1933, a conference was held in Berlin, attended by representatives from the C.I.B. countries and Sweden, Finland, and the U.S.S.R. Here was drafted a program for lumber exports in 1934, based on statistical data and estimates. By a gentlemen's agreement, all except Sweden and France agreed to limit their respective exports of sawn softwood to specified quotas. A similar agreement for 1935 emerged from a comparable conference, attended also by Estonia, held in Vienna in October, 1934.

At a third conference, held in Copenhagen in November, 1935, there was adopted the European Timber Exporters Convention (E.T.E.C.). Effective December 1, 1935, this was subsequently renewed from year to year until 1939. Its members were Austria, Finland, Poland, Rumania, Sweden, Czechoslovakia, the U.S.S.R., Yugoslavia, and, after 1936, Latvia; and the C.I.B. functioned as its secretariat. These nine countries currently produced 95 per cent of Europe's softwood-lumber exports. Neither net-importing countries nor the important overseas lumber exporters, Canada and the United States, were included. Yearly export quotas were assigned, in a total fixed at the highest level of prospective exports, and enforced by export licenses in some countries and by contractual obligations in Sweden and Finland. The E.T.E.C. was credited with restoring confidence in the lumber market, improving relations among leading exporting countries, and promoting substantial improvement in international timber statistics. Its reputation suffered when lumber prices fell in 1938 under the pressure of business recession, and it came to an end soon after Germany invaded Poland. German-dominated agencies superseded these arrangements, and from 1942 the Berlin-centered European Forest and Forest Products Commission annually fixed production, import, and export quotas for lumber, pulp, and plywood in ten affiliated Axis-dominated and neutral countries. The C.I.B. also ceased to function after most of the European continent was overrun by the Nazis.

BEEF

One highly specialized I.C.A. provided for an International Beef Conference To Regulate the Supply of Beef to the United Kingdom Market, which became nominally effective January 1, 1937.[37]

[37] The principal basic documents are printed in I.L.O., *I.C.C.A.'s*, pp. 69–72. See also M. E. Wright,

This covered all forms of beef and veal, edible offals thereof, and live cattle for slaughter. The United Kingdom was clearly the dominant party, but the participating governments eventually included two British Dominions, Eire, and three South American beef exporters. Argentina acceded June 28, 1937, Brazil on December 15, 1937, and Uruguay on January 6, 1939.

The conference—an outgrowth of the Ottawa Agreements of 1932—was designed to protect British beef producers, to give imperial preference to Australian, New Zealand, and Irish producers,[38] to keep non-Empire beef imports into the United Kingdom within bounds consistent with such protection and preference, and to facilitate a smooth flow of beef imports that would permit substantial stability of beef prices in Great Britain. In bilateral agreements with the British government, the others undertook to cooperate to insure the effective operation of the control.

Subject to limitations specified in the agreement, the conference made "recommendations with regard to the total quantities of beef and the various classes of beef to be exported from time to time to the United Kingdom, and to the proportions of those totals to be exported from each country. . . . ." The quarterly quotas thus unanimously recommended became the basis for export regulations; it was never necessary because of lack of unanimity to refer the decision to the British government. British farmers were represented by a person nominated by their organization and appointed by the British government. British consumers were represented by a Board of Trade official. An Empire Beef Council was set up to consider "matters affecting the well-being of the Empire beef trade . . . . ," and in December, 1938, its scope was broadened and its name changed to Empire Meat Council.

Until the onset of war caused its suspension, this scheme worked well from the standpoint of the protected interests. Beef import prices were stabilized at about 5*d*. per pound for Argentine chilled quarters. The scheme, of course, permitted discrimination against the cheapest source of supply, Argentina, whose government and producers would have preferred lower prices and larger quotas. The agreement served merely to facilitate some co-ordination of bilateral arrangements, which have continued during the war under the British Ministry of Food.

Evolution of this limited pre-war scheme into a world beef agreement has not been seriously urged. Indeed, it might not be welcomed by either the United Kingdom or the United States—by the United Kingdom because the change might involve breakdown of British domination and modification of the protectionist features and perhaps raise the price of beef imported into Britain; by the United States because American beef producers prize their vested interest in the domestic market and would presumably fight any move to introduce Argentine competition. If thorny Argentine-American beef ques-

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"Organized Marketing of Export Commodities in Australia," *Foreign Agriculture*, IX (November, 1945), 169–71. In correspondence Mr. Wright has withdrawn his statement that in 1938 "the functions of the Beef Conference were extended to include the regulation of mutton and lamb supplies in the British market, and the name of the organization changed to the International Meat Conference." As mentioned below, it was the Empire Beef Council whose scope and name were altered.

[38] The interests of Canada, South Africa, and the smaller non-Empire producing countries were to be represented by the United Kingdom at their request.

tions[39] and broader issues are ever to receive international consideration, the Food and Agriculture Organization or other agencies will presumably be involved.

WOOL

During World War I the British government purchased the entire exportable surpluses of wool from the three important wool-growing Dominions—Australia, New Zealand, and the Union of South Africa. This terminated on June 30, 1920. A severe slump in wool prices in the ensuing months led, early in 1921, to the organization of the British-Australian Wool Realisation Association, Ltd., which undertook to market the accumulated surplus in an orderly manner. The Australian government fixed a minimum reserve price of 8*d.* (about 15 cents) on wool sold for export from Australia, but wool prices soon recovered, and this arrangement was allowed to expire after six months. B.A.W.R.A. completed its surplus-liquidation task early in May, 1924, to the satisfaction of all concerned. In all it disposed of some eight hundred million pounds (grease basis), of which over two-thirds was Australian wool and most of the rest New Zealand wool.[40]

In 1936 the three Dominions named co-operated in establishing an International Wool Secretariat in London, which has engaged primarily in research and publicity designed especially to meet threats from synthetic fibers.

Another Imperial Wool Purchase Scheme, based on separate but similar agreements with the Australian, New Zealand, and South African governments, was operative in World War II; and the British government's purchase commitments covered one full season after the end of hostilities.[41] As the end of the war approached, unsold accumulations promised to exceed three billion pounds (grease basis), and total world stocks to be around four billion pounds—equal to a large world clip, and more than double the pre-war annual international trade in wool. Australian woolgrowers pressed for extension of the wartime purchase commitment and permanent abolition of the auction system of selling wool. A London Wool Conference held in April–May, 1945, produced an excellent report recommending a four-country surplus-disposal and price-stabilization agreement for wool. Publicly announced after VJ-Day, this is in process of implementation.[42]

The new agreement supersedes the wartime arrangements as from July 31, 1945, though 1945–46 will be a transitional season without change in the guaranteed price. The accumulated wool stocks owned by the British government are to be taken over by an incorporated Joint Organization (J.O.) with eight shares, of which four will be held by the British government, two by the Australian, and one each by the New Zealand and South African governments. The

[39] See E. B. Shaw, "United States Restrictions on Argentine Beef," *Scientific Monthly*, LXI (August, 1945), 101–8; and C. L. White, "The Argentine Meat Question," *Geographical Review*, XXXV (October, 1945), 634–46.

[40] Commonwealth of Australia, *Official Year Book, 1925*, pp. 680–81; *Primary Producer* (Perth, W.A.), March 9, 1944, p. 4; Wright, "Organized Marketing of Export Commodities in Australia," *op. cit.*, pp. 162–64.

[41] This scheme and its operations are perhaps best covered in numerous issues of the Australian monthly, *Pastoral Review and Graziers' Record* (Melbourne).

[42] See Commonwealth of Australia, *Report and Recommendations of Conference Held in London April–May 1945: Post-war Wool Realisations* (August 30, 1945), and *Board of Trade Journal* (London), September 8, 1945, pp. 421–23.

board of directors will consist of one government nominee for each share held, an independent chairman jointly appointed by the four governments, and (without voting power) the chairmen of a subsidiary company in each of the three Dominions. J.O. will buy, hold, and sell wool as the agent of the four governments. The auction system is to be shortly restored, but special representatives of the four governments, with the advice of the J.O. board, are to fix the general level of "reserve" or floor prices on wool before each selling season opens and at other times as may be required. While it is the obvious intent to liquidate the surplus over a period of years (provisionally estimated at thirteen), J.O. may in some years be a net purchaser of wool. It remains to be seen what relative importance will be attached to disposal of stocks, the price level, and "reasonable stability" of wool prices. One significant provision reads:

> The International Wool Textile Organization will be invited to nominate representatives to form, with the addition of representatives from major consuming countries not members of the Organization, a Committee to act in a consultative capacity to the board of the Company [J.O.] from the point of view of wool consumers.

PETROLEUM

Despite a great deal of international combination and competition in oil, chiefly among corporations but involving some governments, there had been no world-wide oil cartel and no I.C.A. for oil until an Anglo-American interim agreement on crude petroleum and its derivatives was signed on August 8, 1944.[43] This contained a statement of broad principles and provided for an International Petroleum Commission with certain limited powers. It was designed not only to promote the early solution of pressing international problems arising over oil in the Middle East but also to pave the way for a "world oil accord" to be signed by many nations. The underlying purpose has been officially stated to be, in brief, "preventing friction between nations growing out of problems of foreign oil and assuring to all an adequate supply."

Secretary of the Interior Ickes, petroleum administrator for war, went on record in the *American Magazine* for January, 1944, as favoring an I.C.A. on oil among the big powers:

> . . . . (1) to share as a postwar responsibility the rehabilitation of war damage to oil facilities in all parts of the world, including Russia, the Dutch East Indies, Rumania, etc.; (2) to make oil supplies available upon fair and equitable terms to all nations and peoples; and (3) to forbid oil supplies to any nation which violates the basic principles of international law as defined by the United Nations at the peace table. . . . .

On February 6, 1944, however, he suddenly announced an agreement between the American official Petroleum Reserves Corporation and two American oil companies, under which the United States government would build and maintain a vast pipeline system in the Middle East. This news gave rise to widespread apprehensions both at home and abroad.

These apprehensions were quieted by the announcement of the Anglo-American agreement. But the agreement itself was attacked as ambiguous and vague, and American independent oil interests

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[43] Pertinent among many possible references are Frederick Haussmann, "World Oil Control: Past and Future," *Social Research*, IX (September, 1942), 334–55; Hexner, *op. cit.*, pp. 256–62; Herbert Feis, *Petroleum and American Foreign Policy* ("Food Research Institute, Commodity Policy Studies," No. 3 [Stanford University, Calif., March, 1944]); and *Department of State Bulletin*, August 13, 1944, pp. 153–56, January 14, 1945, pp. 102–3, August 5, 1945, pp. 173–75, and September 30, 1945, pp. 481–83.

also vigorously protested that it opened the door to highly objectionable cartel regulation. At the request of Secretary Ickes, the National Oil Policy Committee of the Petroleum Industry War Council formulated, and submitted in December, 1944, its proposal for a revised agreement. The official agreement was duly submitted to the Senate for advice as to ratification. Apparently because of the attacks upon it, the Senate Committee on Foreign Relations took no steps to act upon the agreement, and early in 1945 the President formally recalled it for revision.

A thoroughly re-written agreement was signed in London on September 24, 1945, and promptly submitted to the United States Senate. Up to March 1, 1946, no action had been taken upon it. Like its predecessor, the new pact is designed to be the forerunner of a multilateral international petroleum agreement; and the bilateral international petroleum commission for which it provides is conceived as the forerunner of a larger international petroleum council. The revised agreement is more carefully worded to avoid the charge that it is a commodity-control agreement or a government-sponsored cartel. The functions of the commission are essentially those of consultation, study, report, and recommendation.

Obviously, the experience in this field to date concerns merely the steps toward an I.C.A. for oil, and even the bilateral agreement may not be in effective operation for several months.

SUMMARY OBSERVATIONS

If one considers the range and volume of commodities entering into international trade, the proportion subject to control or substantial influence by intergovernmental commodity agreements was negligible until 1931, slight until 1933, and significant only in 1935–39. At their widest extent in 1937–39, I.C.A.–regulated commodities comprised tin, tea, rubber, sugar, beef, lumber, fur seals, north Pacific halibut, whaling, and narcotic drugs. Almost none of these was universal in scope; and I.C.A. controls over sugar, lumber, and whaling were, in fact, especially far from complete. The only I.C.A.'s that have effectually operated for as long as five years were those for tin, tea, rubber, fur seals, halibut, and drugs.

During the war years most of the existing I.C.A.'s came to be largely superseded by unilateral governmental controls or bilateral arrangements. By the end of 1945, few of the pre-war agreements that continued in nominal existence had been reactivated, the coffee and wheat agreements had virtually ceased to function, specialized new I.C.A.'s for wool and petroleum had only recently been published, one of these was awaiting ratification, and a one-year whaling agreement was in limited force.

The recent official American proposals, already accepted in principle by the British government, are that renewal, modification, and expansion of I.C.A.'s should proceed under a new International Trade Organization and be supervised by its subsidiary Commodity Commission, in harmony with principles to be considered at a forthcoming International Conference on Trade and Employment.[44] The principles under serious discussion would require marked departures from past practices.

Commodity-control I.C.A.'s among a few producing countries under Anglo-Dutch leadership operated continuously in tea, tin, and rubber in several years of the decade preceding World War II.

[44] See *Proposals* cited in n. 1.

Two of these admitted advisory representation of tin- and rubber-processing industries in the chief importing and consuming countries. All three exercised their export and production controls with a view to price maintenance and achieved limited success in respect of price stability. None seriously tackled the problem of readjusting excess capacity. The schemes tended to shelter high-cost producers and producing countries, and one (rubber) discriminated against small native producers. Radical changes in tin and rubber export quotas entailed marked fluctuations in employment. Buffer-stock operations were undertaken only for tin, and these only on a limited scale. The lumber I.C.A., under the lead of Continental European exporting countries, had limited aims and success.

Commodity-control agreements including numerous exporting and importing countries were established only for wheat (1933) and sugar (1937), with highly disappointing results. Such service as the coffee agreement rendered during the war does not clearly foreshadow success with a corresponding or broader agreement in peacetime. Conservation agreements for specific marine resources and abuse-control agreements for narcotic drugs proved their value, though hard-won achievements in whaling and drug control were limited. Investigatory and consultative agreements—such as the coffee agreement has become, as the interim wheat agreement of 1942 has been, and as the petroleum agreement seems designed to be—have thus far been tested in peacetime only in the field of marine resources. The short-lived silver agreement was essentially another move to support American silver-producing interests at Treasury expense. The beef agreement was primarily a British-dominated scheme for protecting British and Dominion producers of a commodity of which the Empire is a net importer. The recent wool agreement is a British Commonwealth's undertaking with a commodity of which the Empire is a net exporter. This surplus-disposal I.C.A. is promising in prospect, and its provision for consulting participation seems an improvement on proposals for full-fledged membership by net-importing countries.

Pre-war and wartime experience with I.C.A.'s brings out the great difficulties and delays incident to reaching and rationally revising agreements and their vulnerability to breakdown, especially when numerous countries have important conflicting interests. It reflects tendencies to rely unduly on a favorite restrictive device, export quotas; to be timid in the face of strongly backed nationalistic commodity policies; and to avoid grappling with problems of fundamental economic readjustment.

Recent discussions have tended to focus on I.C.A.'s of the commodity-control type. In the light of experience the conversion of these into desirable and constructive economic institutions appears fraught with considerable difficulties. Other types, in which there has been relatively limited experience, may actually hold more promise.

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SOME ECONOMIC ASPECTS OF THE MARGARINE INDUSTRY[1]

WILLIAM H. NICHOLLS

The Dairymaid she curtsied
And went and told the Alderney,
"Don't forget the butter for the Royal slice of bread."
The Alderney said sleepily,
"You'd better tell His Majesty
That many people nowadays like marmalade instead."

—A. A. MILNE

I. INTRODUCTION

SINCE Napoleon III induced its invention by offering a prize for the development of an inexpensive substitute for butter, margarine has never enjoyed the benevolent hand of the state. In fact, its manufacture and sale have persisted throughout most of the world despite special legislation ranging from mild regulation to outright prohibition. Except Canada, no country has legislated against margarine so strictly as has the United States.[2]

THE POLITICAL SETTING

American margarine legislation has taken three forms. The first type was aimed, nominally at least, at preventing the fraudulent sale of margarine as butter. Thus, twenty-three states prohibit the sale of colored (yellow) margarine, while the federal tax of ten cents a pound on colored margarine, and only one-quarter cent on uncolored, has been effective in eliminating the production and sale of colored margarine in domestic channels. The other two types of margarine legislation have been more obviously "protective" in intent—of butter as against the competition of margarine or of certain raw materials as against alternative raw materials in the manufacture of margarine. Seven states have excise taxes applying to all uncolored margarines, thirteen states impose license fees on retailers of margarine, and sixteen states require wholesalers to pay license fees. Thirteen states levy excise taxes upon only certain kinds of uncolored margarine. For example, two livestock states tax margarines with an animal-fat content below a specified minimum; eight cotton-producing states tax only those margarines made from imported vegetable oils.[3] Along the latter

[1] This study, initiated under Project 595 of the Iowa Agricultural Experiment Station, was completed at the University of Chicago. The author is indebted to Karl Brandt, O. H. Brownlee, and D. Gale Johnson for their aid and criticisms in the development of this manuscript. He is particularly indebted to Miss Elizabeth Fautz, who generously turned over to him for the final draft a great many research materials which she had collected in this field. Finally, the comments of several business executives of the industry have been very helpful.

[2] Canada goes so far as to prohibit the importation, manufacture, and sale of margarine. For the earlier history of the technology of margarine manufacture and a review of foreign margarine legislation see Katherine Snodgrass, *Margarine as a Butter Substitute* ("Food Research Institute, Fats and Oils Studies," No. 4 [Stanford University, 1930]).

[3] O. H. Brownlee, *Putting Dairying on a War Footing* ("Wartime Farm and Food Policy Series," No. 5 [rev. ed.; Ames, Iowa: Collegiate Press, 1944]), pp. 39–40; G. R. Taylor *et al.*, *Barriers to Internal Trade in Farm Products* (Bureau of Agricultural Economics, Special Report [Washington, 1939]), pp. 17–30; W. T. Mickle, "Margarine Legislation," *Journal of Farm Economics*, XXIII (1941), 584–606. For the most recent summary of state margarine taxes and license fees, see *Fats and Oils*

line should also be mentioned the federal duties on imported coconut oil and (since 1934) an excise tax on the first domestic processing of such oil or its raw material, copra.

It is this peculiarly unfavorable political climate which has, in recent years, brought the margarine industry into the limelight despite the fact that the total wholesale value of margarine (1939) was only about thirty-two million dollars and the number of workers probably less than three thousand. This interest was awakened by the increasing publicity about "interstate trade barriers" during the 1930's and the more recent necessity of finding other table fats to supplement wartime butter shortages. As a result, the nutritive value of margarine and the nature and extent of discriminatory taxation directed against this product have received widespread attention in the last decade.

OBJECTIVES

Even today, however, little is known about the structure of the margarine industry itself or of its price and production policies. Here the major contributions have been the work of Snodgrass and of Pabst,[4] which are now somewhat out of date and deal only sketchily with some of the more important aspects of margarine production and distribution. We here propose to bring together some of the basic data on the economic status of the margarine industry. How is the demand for margarine related to the demands for other edible fats? What are the major sources of margarine's raw materials? What have been the recent trends in the industry, such as location, scale of operations, degree of diversification, and marketing channels? What is the degree of concentration in margarine production, and how does this compare with that in the butter, lard, and vegetable-shortening industries? What is the nature of the market structure for the major raw materials? Having answered these questions, in so far as the data permit, we shall conclude with some consideration as to how margarine taxation may have affected the industrial structure of the margarine industry, its selling costs, and the costs of entry into the industry.

II. INTERPRODUCT COMPETITION IN CONSUMPTION

When margarine reaches the consumer market, it probably competes in some degree with all the major edible fats. For table use most consumers probably consider butter and margarine as the closest substitutes; for cooking uses, lard and vegetable shortenings. But margarine and butter are also used to some extent as cooking fats, as are the cooking oils. Even in the United States—in certain regions and among some racial groups—lard and vegetable shortenings (as well as mayonnaise more generally) are used as bread spreads.

INTERWAR TRENDS

During 1921–40 the annual average per capita consumption of the principal classes of edible fats was: butter 17.4 pounds, lard 12.6 pounds, vegetable shortenings 9.4 pounds, margarine 2.3 pounds, and other cooking and salad oils 5.3 pounds (Table 1). On the average, butter accounted for 32.3 per cent of the total fat content of these products and margarine for 4.2 per cent. During

Situation (Washington: Bureau of Agricultural Economics), March–April, 1946, Table 9, p. 22. Of the state license fees on retailers, only four equal or exceed $25 per annum; on wholesalers, only five equal or exceed $100.

[4] Snodgrass, *op. cit.*; and William R. Pabst, Jr., *Butter and Margarine* (New York, 1937).

the interwar period margarine showed a slight upward trend in per capita consumption relative to butter. This might be expected, since margarine prices fell steadily relative to butter prices (Table 2).[5] The price of margarine averaged 55.8 per cent of the price of butter, at retail, during 1921–25 and only 48.0 per cent by 1936–40. Part of this price decline—especially during the 1920's—may have been due to the increasing importance of a cheaper raw material (coconut oil) and to the lower price at which the resulting vegetable margarine sold. The wave of state taxes on the sale of margarine probably slowed up the downward trend after 1930. Yet, despite these taxes and the shift to more expensive raw materials (cottonseed and soybean oils), the price trend continued downward during the thirties. To the extent that state margarine taxes built up a resistance to margarine in the minds of consumers, however, a further lowering of price offered one alternative to margarine manufacturers' and increased selling costs offered another. Furthermore, although margarine consumption was at a relatively high level in 1936–40 (Table 1), it would probably have been somewhat higher if there had been no state margarine taxes.[6]

TABLE 1*

ANNUAL PER CAPITA CIVILIAN DISAPPEARANCE OF THE PRINCIPAL EDIBLE FATS, UNITED STATES BY FIVE-YEAR AVERAGES, 1916–40, AND BY YEARS, 1941–45

Average for Years	Table Fats (Actual Weight)				Cooking Fats (Fat Content)				Other Edible Fats and Oils (Lb. Fat Content)	Total Fats (Pounds Fat Content)		
	Butter (Lb.)	Margarine (Lb.)	Total (Lb.)	Margarine as Per Cent of Total	Lard (Lb.)	Vegetable Shortening (Lb.)	Total (Lb.)	Vegetable as Per Cent of Total		Total (Lb. Fat Content)	Butter as Per Cent of of Total	Margarine as Per Cent of Total
1916–20	15.4	2.9	18.3	15.8	11.2	9.9	21.1	46.9	2.2	37.9	32.5	6.1
1921–25	17.4	1.9	19.3	9.8	13.0	7.4	20.4	36.3	4.4	40.2	34.6	3.7
1926–30	17.7	2.5	20.2	12.4	12.7	9.7	22.4	43.3	5.0	43.6	32.6	4.6
1931–35	17.8	2.1	19.9	10.6	12.9	9.2	22.1	41.6	5.0	43.0	33.0	4.0
1936–40	16.7	2.8	19.5	14.4	12.1	11.2	23.3	48.1	6.7	45.6	29.4	4.8
1921–40	17.4	2.3	19.7	11.7	12.6	9.4	22.0	42.7	5.3	43.1	32.3	4.2
1941	15.9	2.7	18.6	14.5	14.2	10.4	24.6	42.3	8.3	47.8	26.6	4.6
1942	15.6	2.8	18.4	15.2	13.6	8.9	22.5	39.6	8.1	45.3	27.6	4.9
1943	11.9	3.9	15.8	24.7	14.5	9.6	24.1	39.8	6.4	43.1	22.0	7.2
1944	11.8	3.9	15.7	24.8	14.3	9.3	23.6	39.4	6.2	42.4	22.2	7.3
1945	10.5	4.3	14.8	29.1	12.5	9.6	22.1	43.4	5.8	39.7	21.2	8.6

* Computed or compiled from *Fats and Oils Situation* (Washington: Bureau of Agricultural Economics), June, 1943, Table 8 p. 18, and January, 1945, Table 2, p. 5. The data for 1944 are preliminary; those for 1945, forecasts. The actual weight of both *butter* and margarine was converted to fat content (by multiplying by 80 per cent) to obtain "total fats, pounds, fat content." For some unknown reason, the Bureau of Agricultural Economics usually makes this conversion only for margarine. "Other edible fats and oils" includes the fat content of cooking and salad oils, salad dressing, and mayonnaise.

[5] Pabst (*op. cit.*, p. 74), in a multiple correlation analysis of the years 1921–34, found that a decrease of 1 per cent in the ratio of margarine price to butter price means an increase of 0.78 ± 0.29 per cent in total margarine consumption and a 0.18 ± 0.09 per cent decrease in total butter consumption, deflated per capita income being held constant and trends eliminated. However, since he had only 9 degrees of freedom, only the first regression coefficient was beyond the 5 per cent level of significance.

[6] Between 1928 and 1938 the number of retail margarine dealers dropped by 67.8 per cent in

However, it is very unlikely that all the recent increases in per capita consumption of margarine were, pound for pound, at the expense of butter or that the effect of margarine taxes in restricting consumption of margarine has meant a corresponding pound-for-pound gain in the consumption of butter. Supporting evidence is found in the changing relationship of the prices of lard and vegetable shortening to the price of margarine during 1921–40 (Table 2). During 1921–30 the price of lard averaged 66.7 per cent of the price of margarine at retail; during 1931–40 the average rose to 76.9 per cent. In 1921–30 the price of vegetable shortenings was only 85.4 per cent of the price of margarine; in 1931–40 the corresponding percentage was 122.8. Even though, on a fat-content basis, margarine and vegetable-shortening prices were near a parity in the latter period, these changes in relative prices support the view that much of the prewar increase in consumption of margarine resulted from its increased use as a cooking fat. Nevertheless, vegetable shortenings—despite their upward relative price trend—made considerable gains relative to lard during 1921–40 (Table 1).

TABLE 2*

RETAIL PRICES (CENTS PER POUND) OF THE PRINCIPAL EDIBLE FATS
UNITED STATES, FIVE-YEAR AVERAGES, 1917–41

YEARS	AVERAGE RETAIL PRICE (CENTS)				PRICE OF MARGARINE AS PER CENT OF PRICE OF BUTTER	PRICE OF LARD AS PER CENT OF PRICE OF VEGETABLE SHORTENING	PRICE OF EDIBLE FATS AS PER CENT OF PRICE OF MARGARINE			
	Butter	Margarine	Lard	Vegetable Shortenings			Butter	Margarine	Lard	Vegetable Shortenings
1917–20†	61.1	35.2	31.8	35.7‡	57.9	93.07‡	173.6	100.0	90.3	92.2‡
1921–25	52.3	29.2	19.0	23.7	55.8	80.2	179.1	100.0	65.1	81.2
1926–30	53.3	27.8	19.0	24.9	52.2	76.3	191.7	100.0	68.3	89.6
1931–35	31.4	16.1	12.5	20.6	51.3	60.7	195.0	100.0	77.6	127.9
1936–40	36.7	17.6	13.4	20.7	48.0	64.7	208.5	100.0	76.1	117.6
1941	41.1	17.1	12.7	20.5	41.6	62.0	240.3	100.0	74.3	119.9
1942	47.3	22.1	17.2	24.9	46.7	69.1	214.0	100.0	77.8	112.7
1943	52.7	23.6	19.0	24.7	44.8	76.9	223.3	100.0	80.5	104.7

* Data for 1916–35 (average for fifty-one cities) computed from *Dairy Situation* (United States Department of Agriculture), August, 1938; data for 1936–41 computed from United States Bureau of Labor Statistics, *Handbook of Labor Statistics* (1941 ed.), Vol. I (Washington, 1942), Table 4, pp. 694–95. Data for 1942 and 1943 (average of fifty-six cities) are compiled from United States Bureau of Labor Statistics, *Retail Prices of Food 1942 and 1943* (Bull. No. 799 [Washington, 1944]), Table 6.

† Four-year average.

‡ Two-year average, 1919–20, for all prices used in computations.

"SUPERIOR" AND "INFERIOR" GOODS

These trends reflect the fact that, while the vegetable-shortening industry

fourteen states taxing cottonseed oil margarine, while increasing by 27.6 per cent in thirty states and the District of Columbia which did not tax such margarine. The National Cottonseed Products Association has claimed that the taxes in the first group of states caused an annual loss of national margarine sales of 75–80 million pounds, or about 20 per cent (Temporary National Economic Committee, *Hearings*, Part 29: *Interstate Trade Barriers* [Washington, 1941], p. 15834, and Exhibits 2371 and 2372, p. 16136). Between 1927–28 and 1936–37, for the nine states taxing all uncolored margarine, the number of retail dealers fell by 51.5 per cent in the four states with a 5-cent tax, 91.3 per cent in the four states imposing a 10-cent tax, and 99.8 per cent in the two states having a 15-cent tax (*ibid.*, Exhibit 2376, p. 16139).

has had phenomenal success in convincing consumers of the "superiority" of its product over lard, the margarine industry has persistently labored against the "inferior" status of its product relative to butter. This difference is in part historical. While both vegetable shortenings and margarine were originally introduced as adulterants of the existing animal-fat products, the dairy interests were more strongly organized than were hog producers. Furthermore, vegetable shortenings, being based from the beginning on cottonseed oil, derived positive political support from the South at an early date.[7] As a result, the vegetable shortenings have almost completely escaped[8] the discriminatory legislation which has always plagued margarine.

Just as important, however, has been the more clever merchandising policy of the vegetable-shortening industry. Vegetable shortening was promoted, not as a lard substitute, but as a new, purely vegetable product. It was aggressively differentiated from lard by attractive packaging, constant technical and commercial improvement, and extensive advertising.[9] So great was its success that, in recent years, some lards have been so processed, packed, and labeled as to imitate what was originally an "imitation of lard"—vegetable shortening. In 1921 a prominent margarine manufacturer noted that "the sale of margarine as a substitute for butter is affected not by conditions surrounding margarine, but by conditions surrounding butter over which we have not control. . . . . It behooves us, therefore, to stop talking margarine as a substitute and sell it on its own merits."[10] The promotion of margarine has increasingly tended in the direction urged by this manufacturer. Nevertheless, the imitative—as against differentiative—approach has persisted in considerable measure with regard to color, vitamin fortification,[11] flavor, texture, and consistency.[12]

[7] G. M. Weber and C. L. Alsberg, *The American Vegetable-Shortening Industry* ("Food Research Institute, Fats and Oils Studies," No. 5 [Stanford University, 1934]), esp. pp. 34–37; Snodgrass, *op. cit.*, chap. iii.

[8] Except for a 5-cent tax on lard substitutes imposed by South Dakota in 1931 (repealed in 1933), vegetable compounds have been subject only to the labeling requirements of the Pure Food and Drug Acts (Weber and Alsberg, *op. cit.*, pp. 213–22).

[9] *Ibid.*, p. 94.

[10] B. S. Pearsall, "Margarine as Margarine," in *Proceedings of the Second Annual Convention of the Institute of Margarine Manufacturers, 1921*, p. 39. He went on to say (p. 40) that "we margarine manufacturers have not only competition among ourselves and the competition of the butter manufacturers, but have a market already prejudiced against us." He pointed out that, while poor butter is suspected of being margarine, poor margarine perpetuates consumer prejudices against the whole industry.

[11] The basis for the legal minimum of 9,000 International Units of vitamin A per pound, established for "fortified" margarine in 1941, was what was then believed to be the average vitamin A content of butter (National Research Council, *A Report on Margarine* [Washington, 1943], p. 6). Later evidence fixes the vitamin A content of butter somewhat higher (Brownlee, *op. cit.*, p. 39). In October, 1945, the vitamin A content of Best Foods' Nucoa brand of margarine was raised from 9,000 to 15,000 units—now considered the seasonal maximum level for butter. Other manufacturers were expected to follow shortly. That no margarine producer has yet added sufficient vitamin A to exceed that of any other table fat is, in part at least, due to the fear of running afoul of the Pure Food and Drug Act. The cost of assuring a vitamin A content of 9,000 units is about 0.33 cent a pound; of 15,000 units, 0.58 cent.

[12] For some observations on the commercial success of food "imitations" see John B. Canning, "Wartime Developments in Food Processing and Preserving," *Journal of Farm Economics*, February, 1944, pp. 147–48. His conclusion is that "no imitation wins until it stops imitating." The history of the rayon industry would also support this view. The dairy interests, of course, continually strive to perpetuate the idea of margarine as a "butter substitute." Thus, current weekly broadcasts of the American Dairy Association declare that "only butter can be butter."

Current wartime developments have laid the goundwork for a somewhat more independent policy. In 1918 margarine reached a peak of 19.2 per cent of total per capita consumption of the two table fats combined. In 1944 this percentage reached a new all-time high of 24.8 per cent, which (before V-J Day) was expected to reach 29.1 per cent in 1945 (Table 1). The necessities of war, by bringing many consumers to buy margarine for the first time since World War I, have made it possible for the margarine industry to demonstrate more widely the marked improvement in the quality of its product in the inter-war period. Furthermore, the present war has focused the attention of consumers (and especially organized labor) on the increased nutritive value of margarine, the extent of margarine taxes, and the inconveniences of home coloring.[13]

CYCLICAL EFFECTS

Thus far, we have been concerned only with *trends* in the relative consumption and relative prices of the several edible fats. However, the *cyclical* effects are equally interesting, associated as they are with changes in income. For example, the relative importance of margarine as a table fat was below average in 1921–25 and 1931–35 and above average during 1936–40 (Table 1). Annual data make much clearer the tendency for relative margarine consumption to increase during periods of business expansion and decrease during periods of business contraction.[14] On the other hand, cross-section studies of family expenditures have established that, except for the lowest-income families, consumption of margarine decreases as family income is increased.[15]

How can these two findings be reconciled? Part of the answer is probably found on the demand side, part on the supply side. First, when depression becomes really severe, many low-income families may considerably decrease their consumption of margarine as well as butter. In fact, for such families, margarine may be an "inferior" good relative to butter, but a "superior" good relative to some other edible fat such as lard. As a result, a sharp reduction of the lowest incomes may bring about a substitution of lard for margarine, even as a bread spread. The fact that margarine prices have been consistently higher than lard prices (Table 2) probably became especially important during depression periods. Among many middle-income families, on the other hand, margarine is excluded (either consciously or through habit) from their potential consumption

[13] Legislative representatives of both the A.F. of L. and the C.I.O. have recently advocated the elimination of special federal taxes on margarine. For the most recent information on the nutritive value of margarine see the National Research Council's *A Report on Margarine;* "Margarine Fortified with Vitamin A," *Journal of the American Medical Association*, September 16, 1944; and the editorial, "Oleomargarine," *ibid.*, July 21, 1945.

[14] Pabst (*op. cit.*, p. 74), in the statistical analysis previously referred to, found that a 1 per cent increase in deflated per capita income was associated with an increase of 0.11 ± 0.07 per cent in total butter consumption and a 1.46 ± 0.24 per cent increase in margarine consumption, changes in relative prices and trends having been eliminated. Only the latter regression coefficient was statistically significant, however.

[15] Adolf Kozlik, "Some Aspects of the Food Stamp Plan as Applied to Consumption of Fats," *Journal of Farm Economics*, XXIII (1941), 483–92. Kozlik found (p. 487) that "increasing the income of low-income families would probably result in increased demand for butter, mayonnaise and vegetable shortenings, while the demand for lard would probably decline. The effect of increasing income in the low income groups upon the demand for . . . . oleomargarine depends upon the size of the original income and the magnitude of the increase, but it is likely that the consumption [of margarine] . . . . would fall."

pattern even in the face of a sharp decrease in income.

Second, the nature of the supply of butter is quite different from that of margarine. Butter is essentially the residual claimant of the total milk supply. Hence, the "surpluses" available for butter production tend to increase in depression and contract in more prosperous times. The margarine industry, on the other hand, is more typical of manufacturing industries in general, being able to contract its production as prices fall or increase production as prices rise. This essential difference between the butter and margarine industries is probably of foremost importance in explaining the cyclical movement in relative consumption of margarine and butter.[16] As a result, there is at least some tendency for the price of margarine to be higher relative to that of butter in periods of low prices and lower relative to butter in periods of high prices.[17] The lard and vegetable-shortening industries probably differ in a similar way.

III. INTERPRODUCT COMPETITION IN PRODUCTION

In selecting margarine formulas, the manufacturer chooses the least-cost combination of fats and oils commensurate with maintenance of the desired properties, including flavor, of the final product. Through the years, technological progress has gradually increased the physical substitutability of the various animal and vegetable oils. Although no two oils have identical characteristics, it has become increasingly possible, through blending different oils in varying proportions, to obtain finished products of similar properties.[18]

ANIMAL FATS

Historically, margarine production was closely related to the meat-packing industry, hence animal sources (such as oleo oil and neutral lard) were initially very important. As late as 1916–20, animal sources provided an average of 50 per cent of the total weight of fats and oils (excluding milk) used in margarine manufacture. By 1940–44, however, animal sources accounted for only 8 per cent, the remainder coming from such vegetable sources as cottonseed and soybean oil.[19] This trend reflects both (1) the growth of vegetable-margarine manufacture independent of the meat industry and (2) the increasing extent to which the leading meat-packers have produced all-vegetable margarines as their principal brands, using their limited supplies of animal fats only in their minor brands. Table 3 shows a more detailed breakdown of the relative importance of various oleaginous components of margarine since 1916.

COCONUT OIL

During 1916–35 coconut oil rapidly supplanted the animal fats as the major ingredient of margarine. Its principal ad-

[16] Pabst, *op. cit.*, pp. 75–77. A traditional regression analysis of price and quantity data might, therefore, develop a demand curve for butter but something approaching a supply curve for margarine (*ibid.*, p. 68).

[17] During 1927–29 the price of margarine averaged 48–51 per cent of the price of butter, rising to 55–57 per cent in 1930–32. However, it fell to 47.6 per cent in 1933. During 1926–33 the average monthly wholesale price of butter changed 94 out of 95 chances, the price of margarine only 40 out of 95 (National Resources Committee, *Structure of the American Economy*, Part I [Washington, 1939], Appendix 2, Table 1, pp. 189–90).

[18] Gordon W. McBride, "Fats and Oils Battle for Food Industries Market," *Food Industries*, March, 1940, pp. 70–71.

[19] Anne Dewees, *Oleomargarine Statistics* (Washington: Bureau of Agricultural Economics, August, 1936), Table 8, p. 13; and *Fats and Oils Situation*, March, 1945, Table 9, p. 13.

vantages were three: (1) it was of low cost; (2) it could be deodorized to a perfectly neutral flavor; and (3) its chemical nature was such that it melted quickly on the tongue, releasing the flavor of the cultured milk with which it had been churned. On the other hand, it produced a margarine which was too hard to spread at refrigerator temperatures and which became practically liquid at summer room temperatures. Margarine made from other vegetable oils was not subject to this disadvantage but melted at too high a temperature to impart the desired milk flavor.

As a result of these two developments, coconut oil's proportion of the oleaginous ingredients of margarine fell from 75 to 9 per cent between 1933 and 1940. During the same period the relative importance of cottonseed oil increased from 9 to 45 per cent; that of soybean oil, from virtually nothing to 34 per cent. By 1944—reflecting the wartime curtailment of foreign sources of supply—the margarine industry was at last on a purely domestic basis.[21] In that year the five major oils used in margarine were cottonseed oil (44.8 per cent), soybean oil (44.0 per cent), peanut oil (2.6 per cent), oleo oil (2.5 per cent), and corn oil (2.4 per cent).

TABLE 3*

RELATIVE IMPORTANCE OF DIFFERENT OILS USED IN MANUFACTURE OF MARGARINE, BY FIVE-YEAR PERIODS, 1916–44

YEARS	PER CENT OF TOTAL WEIGHT OF FATS AND OILS USED IN MARGARINE CONTRIBUTED BY—					
	Oleo Oil	Coconut Oil	Cotton-seed Oil	Soybean Oil	Other Sources	Total
1916–20	31	25	14	.....	30	100
1921–25	24	41	11	.....	24	100
1926–30	17	58	10	.....	15	100
1931–35	8	66	17	.....	9	100
1936–40	5	24	44	18	9	100
1941–44	4	2	48	38	8	100

* Same sources cited in n. 19.

COTTONSEED AND SOYBEAN OILS

By the early 1930's, however, improved hydrogenation processes had largely solved this technological problem for cottonseed and other domestic oils.[20] And the earlier cost advantage of coconut oil was partially offset by the federal excise tax of 1934 on the first domestic processing of imported raw materials and, to a lesser extent, by state taxes directed against the use of imported oils.

The present importance of soybean oil is, in large degree, a result of the necessities of war rather than of consumers' or manufacturers' preferences. Highly refined soybean oil tends to undergo a noticeable flavor reversion in edible products. While the flavor stability of margarines and shortenings made from soybean oil may be increased by blending with other oils (such as cottonseed oil),

[20] This discussion of margarine technology is based on H. W. Vahlteich, "Custom-built Fats," *Chemical and Engineering News*, XXI (1943), 1240–41.

[21] It thereby first gained significant political allies within agriculture—the cotton South and the soybean producers of the Middle West—against the potent dairy lobby. This new political alignment

the basic technological problem has not yet been solved.[22] Upon its solution (toward which public and private research is being devoted on a large scale) depends, in part, the extent of the postwar market for soybean oil.

The margarine industry must compete with such widely diverse industries as shortening, cooking and salad oils, soap, and paints and varnishes for its raw materials. Prior to the excise tax of 1934 on coconut oil, the margarine industry's major competitor for oils was the soap industry. In 1933, when margarine was still largely on a coconut-oil basis, the industry took 26 per cent of the domestic supplies of this oil and the soap industry 55 per cent (Table 4). In the same year the margarine industry consumed only 1 per cent of the nation's cottonseed oil,

TABLE 4*

PERCENTAGE OF TOTAL DISAPPEARANCE OF EACH MAJOR INGREDIENT OF MARGARINE ACCORDING TO USE, 1933, 1940, AND 1944

Use of Oil	Kind of Oil																	
	Coconut			Cottonseed			Soybean			Peanut			Oleo			Corn		
	1933	1940	1944	1933	1940	1944	1933	1940	1944	1933	1940	1944	1933	1940	1944	1933	1940	1944
Margarine	25.7	3.6	.....	1.4	8.4	18.8	†	17.5	17.1	18.7	2.8	9.6	29.6	20.6	20.8	0.3	0.2	5.3
Vegetable shortening	1.2	2.9	†	65.8	59.8	42.7	1.5	42.5	50.2	23.6	36.4	47.8	0.6	1.3	4.7	0.9	0.4	2.5
Other edible products	11.9	9.1	†	9.4	19.1	31.6	1.5	8.0	12.2	9.0	15.8	18.9	1.4	0.1	0.1	22.6	41.3	22.3
Soap	55.2	66.4	63.3	0.5	0.2	†	13.4	3.5	0.3	3.8	0.6	0.4	0.2	0.2	5.7	3.0	2.1	0.4
Paint and varnish	†	0.2	†	†	†	†	27.1	6.0	1.5	†	.....	.....	†	.....	.....	0.2	0.1	†
Linoleum, oilcloth	‡	.....	.....	‡	.....	.....	17.8	1.5	†	‡	.....	.....	‡	.....	.....	†	.....	.....
Miscellaneous	0.5	0.9	32.7‖	0.3	0.2	0.5	8.5	3.3	2.6	0.2	2.1	4.5	5.6	0.7	0.1	2.9	1.3	1.3
Refining loss§	5.5	5.3	4.0	8.7	5.2	6.4	2.7	4.2	5.7	7.6	6.2	5.8	.....	†	.....	5.7	6.0	6.8
Total factory consumption	100.0	88.4	100.0	86.1	92.0	100.0	72.5	86.5	89.6	62.9	63.9	87.0	37.4	22.9	31.4	35.6	51.4	38.6
Total disappearance¶	98.4	100.0	97.4	100.0	100.0	99.7	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* Data for 1933 computed from *Fats and Oils Situation*, April, 1939, Tables 6, 8, 26, 22, 15, and 7; 1940 data from *Fats and Oils Situation*, April, 1945, Table 4.

† Less than 0.1 per cent, included in "Miscellaneous."

‡ Included in "Miscellaneous."

§ Including oil in foots (mostly soap stock).

‖ Including 31 per cent for production of fatty acids.

¶ Where reported factory consumption exceeded total apparent disappearance, factory consumption was taken as 100 per cent.

was reflected in the unsuccessful efforts of Representative Fulmer and Senators Maybank and Smith (all of South Carolina) to repeal the federal color tax during the present war ("Will Butter Win the Peace?" *Fortune*, XXX [1944], 184–88). The importance of this political factor is suggested by the fact that (1) margarine technologists still insist that coconut oil makes the best margarine and that (2), even with present duties and taxes, coconut oil is less costly than competing domestic oils.

[22] "Soybean Oil," mimeographed release of the Northern Regional Research Laboratory (United States Department of Agriculture), Peoria, Illinois, April, 1940, p. 4. Just prior to the war, the best-quality margarines were probably on a 100 per cent cottonseed-oil basis, soybean oil being used primarily in lower-priced brands. During the war the best-quality margarines have been forced, by government-imposed quota systems, to use up to 40 per cent soybean oil. Quotas were initially established on the basis of total use of oils by firms. Those margarine firms also making vegetable shortenings were therefore at some advantage, since they used their soybean oil in their shortening, continuing to make a 100 per cent cotton-oil margarine. More specialized margarine producers had no choice but to use considerable soybean oil in their margarine, even if they had never before done so. In 1944 the basis for oil quotas was changed to one of product use. Since then, all firms have used soybean oil extensively in their margarines.

66 per cent of which went into vegetable shortening and 9 per cent into other edible products.

Unlike the soap industry, the margarine industry subsequently shifted heavily to domestic oils, bringing it into more far-reaching competition with the shortening and cooking-and-salad-oil industries. Thus, in 1944, the last-named industry was more important than margarine in the markets for cottonseed, peanut, and corn oils. And the vegetable-shortening industry consumed 43 per cent of the domestic supplies of cottonseed oil, 50 per cent of the soybean oil, and 48 per cent of the peanut oil. Of these three oils, the margarine industry took 19, 17, and 10 per cent, respectively, as well as 21 per cent of the oleo oil and 5 per cent of the corn oil. Because of the high degree of substitutability among the various raw materials of margarine, it is perhaps more significant that the margarine industry consumed only 6 per cent of the nation's total supplies of vegetable fats and oils in 1940, and 8 per cent in 1944. Butter, dependent exclusively on a single animal fat, utilized—essentially as a residual to the claims of other dairy products—about 40 per cent of total butterfat production in 1940 and about 30 per cent in 1944.

IV. RECENT TRENDS IN THE MARGARINE INDUSTRY

CHANGING LOCATION OF INDUSTRY

In 1929–30, 349 million pounds of margarine were produced in the United States (Table 5). Of this total, less than 5 per cent was colored—mostly for export, federal institutions, and other tax-free uses. In 1943–44 total margarine production was 609 million pounds, of which 22.2 per cent was colored, largely for lend-lease shipment. In 1929–30 five states produced 81.0 per cent of the nation's margarine. Illinois ranked first with 45.2 per cent, followed by California, Ohio, New Jersey, and Kansas with 6 to 11 per cent each. Illinois and Kansas reflected the importance of meat-packing, California and New Jersey the importance of imported raw materials. By 1943–44 the five leading states produced 76.7 per cent of all domestic margarine. Illinois (Chicago and environs), while still first in rank, manufactured only 29.7 per cent, its output having expanded far less than national production. Ohio, California, New Jersey, and Indiana followed with 8–14 per cent each. In the latter year, ten states produced 97.1 per cent of the nation's margarine—Kansas, Texas, Michigan, Georgia, and Maryland ranking sixth to tenth, respectively.

Regionally, the most noteworthy recent change has been the growing importance of the South, which increased its total margarine production from 0.9 per cent in 1934–35 to 9.3 per cent in 1943–44. Texas rose from tenth place (0.8 per cent) to seventh place (5.2 per cent), while Georgia (producing no margarine in 1934–35) attained ninth place (3.2 per cent). These trends reflect the growing influence of cottonseed oil on the location of the industry. Between 1934–35 and 1943–44 the north central states' share fell from 78.0 to 63.6 per cent, the western states' proportion increasing from 11.5 to 12.2 per cent, the northeastern states' share from 9.6 to 14.9 per cent.

INCREASING SCALE AND DIVERSIFICATION OF PLANT OPERATIONS

The manufacture of margarine is distinctly large-scale and centralized. The number of licensed margarine plants in the United States reached a maximum of 77 in 1930, declining to only 38 by 1938

TABLE 5*

TOTAL MARGARINE PRODUCTION (COLORED AND UNCOLORED), NUMBER OF LICENSED PLANTS AND AVERAGE PRODUCTION PER PLANT, BY STATES AND REGIONS, 1930, 1935, 1940, AND 1944 (YEAR ENDING JUNE 30)

STATE AND REGION	TOTAL PRODUCTION (MILLIONS OF POUNDS)				NO. OF PLANTS				AVERAGE PRODUCTION PER PLANT (MILLIONS OF POUNDS)			
	1930	1935	1940	1944	1930	1935	1940	1944	1930	1935	1940	1944
Illinois	158.0	143.0	89.9	180.8	15	11	9	9	10.5	13.0	10.0	20.1
Ohio	31.5	61.9	50.9	88.1	5	5	4	4	6.3	12.4	12.7	22.0
California	38.8	38.5	38.6	74.6	15	9	8	9	2.6	4.3	4.8	8.3
New Jersey	31.5	28.0	19.4	72.6	4	3	2	4	7.9	9.3	9.7	18.1
Indiana	4.4	22.4	33.2	51.4	2	2	1	1	2.1	11.2	33.2	51.4
Kansas	23.4	25.5	20.9	31.9	7	4	4	4	3.3	6.3	5.2	8.0
Texas	4.8	3.1	10.1	31.5	2	2	3	4	2.4	1.5	3.4	7.9
Michigan	6.4	13.6	16.6	22.9	1	1	1	1	6.4	13.6	16.6	22.9
Georgia	.....	.....	2.9	19.7	0	0	1	2	.....	.....	2.9	9.8
Maryland	8.8	5.8	9.8	18.2	3	1	2	1	2.9	5.8	4.9	18.2
Missouri	12.7	8.5	8.6	12.0	6	2	2	2	2.1	4.3	4.3	6.0
Other†	28.8	3.2	2.9	5.4	17	5	5	3	1.7	0.6	0.6	1.8
United States	349.1	353.8	303.8	609.0	77	45	42	44	4.5	7.9	7.2	13.8
Northeast‡	45.1	33.9	29.2	90.8	11	6	4	6	4.1	5.8	7.3	15.1
North central	251.3	275.9	220.7	387.1	40	26	22	21	6.3	10.6	10.0	18.4
South	6.7	3.1	13.9	56.6	5	2	7	8	1.3	1.5	2.0	7.1
West	46.0	40.9	40.0	74.6	21	11	9	9	2.2	3.7	4.4	8.3

* *Annual Report of the Commissioner of Internal Revenue for the Fiscal Year Ended June 30, 1944* (Washington, 1944). Total production figures from Tables 33 and 34 (and comparable tables in annual reports for fiscal years ending in 1930, 1935, and 1940); number of plants taken from Table 32 (and comparable tables in earlier annual reports).

† There were thirteen other states (including Wisconsin and Minnesota, ranking seventh and tenth in production) in 1930; four in 1935; five in 1940; and three in 1944.

‡ Regional classification same as census, except Maryland classified in Northeast.

(Table 6). During the same period the average scale of operations per plant more than doubled—increasing from 4.5 to 10.9 million pounds. By 1944 there were 44 plants with a record average scale of 13.8 million pounds per plant.[23] Even in 1944 the average scale in the South and West was less than half of that in other regions (Table 5), but every region and principal state shared in this trend toward larger-scale operations.

Between 1929 and 1935 the number of establishments whose primary product was margarine declined from 41 to 14 (Table 7)—a much sharper drop than that for all establishments (Table 6).

[23] This scale would be at least twenty-five times that of the average butter factory.

TABLE 6*

TOTAL MARGARINE PRODUCTION (COLORED AND UNCOLORED), NUMBER OF LICENSED MARGARINE PLANTS, AND AVERAGE PRODUCTION PER PLANT, UNITED STATES, FOR SELECTED YEARS, 1926–44

Year Ending June 30	Total Production (Millions of Pounds)	No. of Plants	Average Production per Plant (Millions of Pounds)
1926	248.1	65	3.8
1928	294.7	63	4.7
1930	349.1	77	4.5
1932	215.3	58	3.7
1934	243.2	47	5.2
1936	371.8	42	8.9
1938	415.4	38	10.9
1940	303.8	42	7.2
1942	368.8	45	8.2
1944	609.0	44	13.8

* Same sources as Table 5.

This would suggest a distinct trend toward greater product diversification *within plants*. Furthermore, even those 14–18 establishments which remained relatively specialized derived 40 per cent of their total revenue from products other than margarine in 1939, as compared with only 23 per cent in 1935. Increasing diversification is further reflected in Table 8, where it will be noted that those establishments whose primary product is margarine produced 62 per cent of total margarine production during 1925–29, but only 57 per cent in 1935–39. Production in meat-packing establishments producing margarine as a secondary product declined from 29 to 26 per cent in the same period. On the other hand, other types of establishments increased their share of margarine production from 9 to 17 per cent.[24] As we shall see shortly, the trend toward diversification *within firms* was considerably greater than that within plants.[25]

TABLE 7*

PERCENTAGE OF TOTAL VALUE OF PRODUCT CONTRIBUTED BY (1) MARGARINE AND (2) OTHER PRODUCTS, 1925–39, IN ESTABLISHMENTS IN WHICH MARGARINE IS THE PRIMARY PRODUCT†

Product	1925	1927	1929	1931	1933	1935	1937	1939
Margarine	88	84	76	65	73	77	69	60
Other products‡	14	16	24	35	27	23	31	40
Total	100	100	100	100	100	100	100	100
No. establishments	38	36	41	32	16	14	16	18§

* Compiled or computed from *Biennial Census of Manufactures* (calendar-year basis).

† This census classification excludes those establishments in which margarine is secondary to meat products or other (nonmeat products.

‡ Salad dressings, salad and cooking oils, other edible vegetable oils, shortening (other than lard), and soap stock.

§ Distributed as follows: Illinois, four; California and Ohio, three each; Texas, two; and Alabama, Indiana, Maryland, Michigan, Missouri, and New Jersey, one each.

CHANGING STRUCTURE OF OWNERSHIP AND CONTROL

Thus far we have dealt only with the statistics of individual plants ("establishments") without regard for their ownership and control through firms. In 1930 Snodgrass estimated that "the packers and a few large independents probably control 75 per cent of the output."[26] From other sources, it can be stated that—in the year ending June 30, 1927—Swift and Company produced

[24] During the early 1930's the meat-packing establishments curtailed their margarine production least, so that their proportion of total production rose sharply. The opposite was true of those establishments in which margarine was secondary to other (nonmeat) products.

[25] It should be emphasized that the threefold classification of Table 8 cuts across all lines of ownership, being based on the primary product of the establishment and not on that of the parent-firm. For example, a specialized margarine plant, even though owned and operated by a meat-packing firm, would be classified in the first rather than in the second group. That Table 8 underestimates the importance of the meat industry in margarine is illustrated by the fact that, while the census showed 108 million pounds produced as a secondary product of meat-packing establishments in 1929, it is known that Armour and Swift alone produced 128 millions in that year.

[26] *Op. cit.*, p. 232.

about 18 per cent of the nation's margarine, John F. Jelke Company 16 per cent, Armour and Company 15 per cent, and Wilson and Company 5 per cent.[27] Thus, the three meat-packers produced 38 per cent, the four companies (including a nonpacker) about 54 per cent. Although its production figures are not available, Best Foods, Inc., probably ranked among the leaders of the industry.

By 1937 the four largest margarine producers accounted for 46.2 per cent of total margarine production and 48.9 per cent of its total value. In that year there were twenty-five firms producing margarine in forty-three establishments, of which nine were owned by the four largest firms.[28] During the ten years 1927–37 there would thus appear to have been a decline in the degree of concentration in the industry. This was in large part due to the growth and consolidation of some of the smaller independent firms during the interim. The Glidden Company, although already producing some margarine before 1929, expanded its facilities markedly in that year through the purchase of three margarine companies and of E. R. Durkee and Company.[29] The Kraft Foods Company also entered margarine production in 1937, becoming a significant factor in the market by 1940. The two independents growing most rapidly during this period were Standard Margarine Company of Indianapolis and and Capital City Products Company of Columbus. Standard produced about 1 per cent of the nation's margarine in 1930 and 9.4 per cent (largely under a private brand of A & P) in 1937. Capital City expanded its share from 4.2 to 10.6 per

TABLE 8*

PERCENTAGES OF TOTAL MARGARINE PRODUCTION ACCORDING TO TYPE OF ESTABLISHMENT, 1925–39

Establishments in Which Margarine Is—	Year							
	1925	1927	1929	1931	1933	1935	1937	1939
(1) The primary product	70	61	55	54	52	51	60	59
(2) Secondary to meat products	28	30	30	39	34	30	24	24
(3) Secondary to other (nonmeat) products	2	9	15	7	14	19	16	17
Total margarine production	100	100	100	100	100	100	100	100

* Computed from *Biennial Census of Manufactures*.

[27] Swift and Armour data computed from *U.S.* v. *Swift & Co. et al.* Supreme Court, D. of C., In Equity No. 37623 (1930), Petitioners' Exhibits No. 114 and 138–42; Jelke and Wilson data from House Committee on Agriculture, *Hearings on H.R. 10958* (70th Cong., 1st. sess. [April, 1928]), p. 138. In 1929 (calendar year) Swift's share was 21 per cent, Armour's 16 per cent.

[28] Willard L. Thorp and Walter F. Crowder, *The Structure of Industry* (T.N.E.C. Monograph No. 27 [Washington, 1941]), p. 423. In 1935, of the fourteen establishments listed by the census as producing margarine as the "primary product," six were owned by four firms, producing 79 per cent of the total value of this group's product (National Resources Committee, *op. cit.*, Part I, p. 252).

[29] *Moody's Manual of Industrials, 1943*, p. 1146.

cent during the same period.[30] It is believed that Armour and Company declined a great deal in relative importance during the 1930's.

In July, 1941, Swift had eight margarine plants; Armour four; Best Foods, Glidden, and Wilson three each; and Cudahy two. All other (eighteen) firms —including Kraft, Jelke, Standard, and Capital City—apparently had only one plant each.[31] At the present time, Kraft has five plants, two of them in the South. In late 1942, Standard Brands, Inc., entered the margarine field by acquiring the Standard Margarine Company (Indianapolis) and Southern States Foods, Inc. (Dallas).[32] The former Standard Margarine plant alone produced 8.4 per cent of total margarine production in 1944, while Capital City's share had fallen sharply to 3.4 per cent. By 1944, according to a reliable private estimate, Swift, Best Foods, Kraft, and Jelke together produced about 45 per cent of the nation's margarine. And *Fortune* estimated that, of twenty-two margarine firms, the six largest did about 60 per cent of the total margarine business—in order of size, Best Foods, Swift, Kraft, Durkee's Famous Foods (Glidden), Standard Brands, and Jelke.[33] Each of the first three probably produces 12–16 per cent of the nation's production. The other packers—Armour, Cudahy and Wilson—probably still fall within the first ten producers. We may conclude that, while the total number of margarine firms has declined markedly since 1929, the number of large-scale, well-financed, and technologically progressive firms has increased considerably.

V. INDUSTRIAL ORGANIZATION IN THE EDIBLE FATS AND OILS

PRODUCT DIVERSIFICATION WITHIN FIRMS

At the present time most of the principal margarine firms are giant, broadly diversified organizations, with integrated distribution facilities direct to the retailer. During the early 1930's Best Foods was merged with a subsidiary of General Foods, Inc.—Richard Hellman, Inc. (mayonnaise)—as the Gold Dust Corporation (soap cleanser). In 1942, however, General Foods (one of the nation's most diversified food corporations) sold its interest in Best Foods. In 1944, Best Foods had net sales of 84 million dollars, derived from margarine, mayonnaise, and salad dressings, as well as from pickles, cereals, shoe polish, and flour.[34] Standard Brands, Inc. (founded in 1929), distributes coffee, tea, baking powder, yeast products, ginger ale, alcoholic beverages, and cheese, as well as margarine. In 1944 its net sales were 237 million dollars.[35]

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[30] These two independents, being the only margarine firms in their respective internal revenue districts, were identifiable from the annual reports of the Commissioner of Internal Revenue.

[31] From a National Margarine Institute list. Of the seventeen packer-owned plants, there were four each in Chicago, Kansas City (Kans.-Mo.), and Los Angeles; two in Jersey City; and one each in Atlanta, St. Paul, and Fort Worth. Of the nine plants owned by the six above-named nonpackers, four were in Chicago, two in the San Francisco area, and one each in Indianapolis, Norwalk (Ohio), and Bayonne (N.J.).

[32] *Moody's Manual of Industrials, 1943*, p. 1463.

[33] "Will Butter Win the Peace?" *Fortune*, November, 1944, p. 132. The leading brands of the six companies are, respectively, Nucoa, Allsweet, Parkay, Durkee's, Bluebonnet, and Good Luck. The two newcomers, Kraft and Standard Brands, are the industry's principal radio advertisers. While Best Foods has some spot radio commercials, it largely depends upon colored displays in national newspapers and magazines. Swift and Jelke have used visual methods (magazines, billboards) as their principal advertising mediums.

[34] *Moody's Manual of Industrials, 1943*, pp. 2284 and 2696.

[35] *Moody's Manual of Industrials, 1945*, p. 2385.

The Glidden Company, originally in paints and varnishes, entered the food field in 1920. With its acquisition of Durkee's in 1929, Glidden's food division became much more important. In 1944 its food division accounted for 27 per cent of its total capital investment, paints and varnishes for 26 per cent, chemicals and pigments for 23 per cent, and soya products for 24 per cent. In that year its net sales amounted to 112 million dollars.[36] Of its total food business (1942), bulk shortenings composed 60 per cent, margarine 15 per cent, table shortenings 10 per cent, and spices, coconut, and mayonnaise products 5 per cent each. Even Capital City, an outstanding small margarine producer—with net sales of 14 million dollars in 1944—also sells salad dressings, refined vegetable oils, vegetable shortenings, and coconut oil specialties.[37]

Kraft Foods Company is a subsidiary (since 1930) of the National Dairy Products Corporation, whose net sales in 1944 were 594 million dollars. Of National Dairy's total sales (1941), fluid milk and cream contributed 31 per cent, cheese 23 per cent, ice cream 14 per cent, butter 11 per cent, and miscellaneous products (margarine, mayonnaise and salad dressings, confections, evaporated milk, frozen foods, vegetable juices, carbonated beverages, canned eggs, etc.) 21 per cent. In 1940 National Dairy utilized 9 per cent of the nation's total milk production.[38] Of the leading margarine producers, the four largest meat-packers have been broadly diversified for the longest period—for at least thirty to forty years. Their list of products is far too numerous to mention but includes lard, vegetable shortenings, butter, and soap products as well as margarine. In 1944 Swift, Armour, Wilson, and Cudahy had net sales of 1,574, 1,478, 533, and 420 million dollars, respectively.[39] Of the six largest margarine producers, only Jelke remains relatively specialized.

The meat-packers and National Dairy (Kraft) are among the leading distributors of all the principal edible fats. In 1934–35 Swift distributed about 8.4 per cent of the nation's butter, Armour 7.3 per cent, Beatrice Creamery Company 5.2 per cent, and National Dairy 5.4 per cent. Wilson and Cudahy each distributed an additional 1–2 per cent.[40] The four meat-packers, of course, led in lard production. Of the total wholesale slaughter of hogs in 1935, Swift killed 24 per cent, Armour 18 per cent, Wilson 6 per cent, and Cudahy 5 per cent.[41] In vegetable-shortening production (1933), Swift led with 33.6 per cent, followed by Armour (16.1 per cent), Wesson and Snowdrift Company (15.0 per cent), Procter and Gamble (11.9 per cent), Wilson (10.3 per cent), and Cudahy (4.7 per cent).[42] In 1939, of Procter and

[36] *Ibid.*, p. 501.

[37] *Ibid.*, p. 2816.

[38] *Ibid.*, pp. 2348–49. Margarine was a natural line for both Kraft and Standard Brands to add. Kraft, for example, had (for some years before entering margarine production) jobbed the margarine products of smaller firms to assure fuller utilization of its truck-distributing facilities direct to the retailer. Because of its mayonnaise business, its staff was already experienced in the technology and buying of oils. Floor space was available in existing plants. There appeared to be a market for a quality product, and the Kraft name was already well known to the consumer.

[39] *Ibid.*, pp. 521, 757, 851, and 532.

[40] William H. Nicholls, *Post-war Developments in the Marketing of Butter* (Iowa Agricultural Experiment Station, Research Bulletin 250 [Ames, Iowa, 1939]), pp. 349–52. In recent years Beatrice Creamery Company has begun to distribute margarine.

[41] Computed from unpublished exhibits of the Packers and Stockyards Administration. Morrell and Company killed slightly more than Cudahy.

[42] Walton H. Hamilton *et al.*, *Price and Price Policies* (New York, 1938), p. 276 n. National Dairy

Gamble's total business, vegetable shortenings contributed one-third, soap two-thirds.[43] In 1936 Lever Brothers entered the vegetable-shortening field with a four-million-dollar sales campaign. Within a few years its Spry brand was pressing close on the heels of Procter and Gamble's popular Crisco.[44]

In 1937, among the principal edible fats, the degree of concentration was greatest in cooking and salad oils, the four largest firms producing 73.2 per cent of the national aggregate. The four largest producers handled 65.0 per cent of the vegetable shortenings, 48.8 per cent of the lard, and 46.2 per cent of the margarine. In the manufacture of butter, the four largest firms handled about 17 per cent; in its wholesale distribution, about 26 per cent.[45] While more recent data are not available, the individual firms previously mentioned are undoubtedly still the leading producer-distributors of these various edible fats.

MORE DIRECT CHANNELS OF DISTRIBUTION

During the last fifteen years the bulk of the nation's margarine has probably come to move direct from manufacturer to retailer through integrated marketing channels. This was already true for packer-produced margarine several decades ago. More recently, however, a large part of the industry has fallen into the hands of other large-scale integrated firms such as Kraft, Standard Brands, Glidden, and Best Foods, which are also organized to distribute broadly diversified lines of food products through to the retailer.

This trend toward more direct distribution has been shared even by the more specialized margarine establishments. In 1935 the fourteen establishments whose primary product was margarine sold 65 per cent of their products, by value, through independent wholesalers and jobbers and 35 per cent direct to retailers and industrial users (including 10.8 per cent through their own wholesale branches). By 1939 there were eighteen such establishments, selling 60.8 per cent through independent wholesalers and jobbers and 39.2 per cent direct to retailers and industrial users (including 17.2 per cent through their own wholesale branches).[46] If the census data included those establishments in which margarine was secondary to meats and other products (accounting for 55 per cent of the plants and 41 per cent of the production in 1939), it is almost certain that the independent wholesaler-jobber would have been shown to be less important than more direct channels.[47]

(Kraft) and Wesson are leading producers of mayonnaise and cooking oils, respectively.

[43] *Fortune*, April, 1939, pp. 77, 80.

[44] By 1939 it was estimated that the annual sales of Crisco, Spry, and Snowdrift (Wesson) were 25, 20, and 5 million dollars, respectively (*Fortune*, September, 1939, p. 106). Of Procter and Gamble's total shortening sales, Crisco accounted for about one-third (*Fortune*, April, 1939, pp. 80, 82). In 1935 the four largest soap firms produced 73.5 per cent of the industry's total value of product (National Resources Committee, *op. cit.*, p. 252). The three leading firms were undoubtedly Procter and Gamble, Lever Brothers, and Colgate-Palmolive-Peet. Procter and Gamble apparently produces no margarine. Lever Brothers, while producing no margarine, is a subsidiary of the British firm, with other subsidiaries which are the largest margarine producers in the world (Europe and Dutch Indies). Colgate, which sold its margarine interests to Glidden in 1929, produces neither margarine nor shortenings.

[45] Butter data from Nicholls, *op. cit.*, p. 362, and National Resources Committee, *op. cit.*, p. 252. All other data from Thorp and Crowder, *op. cit.*, p. 423.

[46] *Sixteenth Census of the United States, Census of Business*, Vol. V: *Distribution of Manufacturers' Sales* (Washington, 1939), Table 3, p. 24.

[47] This trend toward direct distribution has been general in the food field during the last two decades. For example, by 1935, only 35.9 per cent of butter

THE RAW-MATERIALS MARKET STRUCTURE

The demand for fats and oils cuts across final-product lines, many of which —as we have just seen—are produced by the same large firms. Hence, in the raw-materials market, the concentration of buying power is much greater than one might first suppose.[48]

The cottonseed-oil market is a good example. Cotton is delivered by the producer to the local gin, where the lint is separated from the seed. From the gin, the seed is usually sold to crushing mills, which make the crude oil for the refiners. In 1933, 75 per cent of the nation's cottonseed oil went into vegetable shortenings and salad and cooking oils (Table 4). The five largest producers of these products—Wesson Oil, Procter and Gamble, Swift, Armour, and Wilson—refined over 70 per cent of the crude oil. The first three also owned sufficient crushing mills to produce about 25 per cent of all crude oil, purchasing the remainder (an additional 35 per cent) for their refineries.[49] The three meat-packers were also important producers of margarine, being among the first to use cottonseed oil extensively in this product. However, in that year only 1 per cent of the cottonseed oil was used in margarine, 9 per cent of its fat content being derived from this oil.

By 1939 cottonseed oil had also become a major ingredient of margarine (Tables 3 and 4). In that year Procter and Gamble was the largest consumer of cottonseed oil, taking about 20 per cent of the nation's production. It was also said to be the largest refiner of cottonseed oil (probably slightly larger than Wesson), but sold little of its oil output to other companies.[50] Wesson was estimated to handle about 12–14 per cent of the annual crush of cottonseed and about 20 per cent of the nation's cottonseed oil. Of Wesson's gross sales of 61 million dollars, 28 millions were derived from bulk sales of cottonseed oil to margarine, mayonnaise, and shortening manufacturers and 12 millions from its own lines of cooking oils and shortenings.[51] At the present time Procter and Gamble, Wesson, and Swift are still the largest crushers and refiners of cottonseed oil.

With the recent increased importance of soybean oil in food products, many of these plants have undoubtedly been processing soybeans as well as cottonseed. In October, 1943, of the total capacity for soybean crushing and extraction, the three largest firms operated 33.0 per cent (about 11 per cent each), the six largest 50.8 per cent, and the nine largest 61.3 per cent.[52] Today, the leading soybean crushers are (roughly in order of size) A. E. Staley, Archer-Daniels-Midland, Glidden, Spencer Kellogg, Central Soya, and Swift. In 1937, 68.1 per cent of total corn-oil production was in the hands of

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sales moved from factory to retailer through independent wholesaler-jobbers (Nicholls, *op. cit.*, p. 362).

[48] See above, pp. 228–30.

[49] Hamilton *et al.*, *op. cit.*, pp. 271 and 275. The ten largest crushing interests controlled about 45 per cent of the South's active cotton presses, the two to three largest interests accounting for 45–65 per cent of the crushing capacity in every cotton state but Texas, where no one interest accounted for as much as 10 per cent (Federal Trade Commission, *Report on Cottonseed Industry* [Washington, 1933], Part 13: *Summary*, pp. 15716–17).

[50] *Fortune*, April, 1939, pp. 77, 80.

[51] *Fortune*, September, 1939, pp. 68 and 106. Gross sales of other cottonseed products were: 7.2 million dollars from meal, 4.9 millions from refinery by-products (mostly soap stocks), 1.0 million from linters, and 0.6 million from hulls. As a limitation on risk of inventory losses, Wesson bought 50 per cent of its raw material as crude oil from independent crushers.

[52] Memorandum of Warren H. Goss, Northern Regional Research Laboratory, United States Department of Agriculture, Peoria, Ill.

the four largest firms.[53] In corn products the Corn Products Refining Company accounted for about 40 per cent, Staley another 13 per cent.[54] About the same time, a Lever Brothers subsidiary produced over 50 per cent of all coconut oil shipped out of the Philippines.[55] In 1939 this would amount to 27 per cent of the net exports of the principal producing countries and 59 per cent of the net imports of the United States.

According to a recent private estimate, of the combined production of the nation's principal vegetable oils, Swift probably now refines about 30 per cent, Procter and Gamble and Wesson 20 per cent each, Armour 5 per cent, Lever Brothers 4 per cent, and Glidden 3 per cent.[56] In addition to Swift, Armour, and Glidden, the only other margarine producers refining their own oils are Cudahy, Wilson, Best Foods, Capital City, and Blanton (St. Louis). All other margarine manufacturers—including such important firms as Kraft, Standard Brands, and Jelke—buy all their oil supplies from independent refiners. Despite the high degree of concentration in the refining of vegetable oils, these larger nonrefiners claim that they are at no disadvantage price-wise in obtaining their raw materials. Quality control apparently offers slight difficulties, however, even though they buy on specification. It is known that some of them have considered the feasibility of entering the refining field but have concluded that it will not pay them to do so.

[53] Thorp and Crowder, *op. cit.*, p. 421.

[54] *Fortune*, September, 1938, p. 56. Staley's customers include manufacturers of all the edible vegetable fats.

[55] *Fortune*, November, 1940, pp. 95 ff.

[56] While the source of this information is considered highly reliable, the relative position of the several firms is more likely to be precisely accurate than their absolute percentages.

VI. TAXATION AND COMPETITION IN THE MARGARINE INDUSTRY

One of the more recent arguments in support of margarine taxation raised by representatives of the dairy industry has been that, since the margarine industry is "monopolistic" and the butter industry "competitive," consumers would not receive the benefits even if margarine taxes were eliminated. Without subscribing to this view, Pabst lends some indirect support to it in the following statement:

> The organization manufacturing margarine must be in a position to employ chemists and technicians to develop and control its product; it must be powerful enough to market its brand of product and to secure the necessary trade connections; it must be able to pay the manufacturer's license fee and withstand the great fluctuations in output which come with business changes. These restrictions on entry into the field indicate why margins within that field may be higher than they would be under the free flow of competition. Butter making is a competitive enterprise; it may be carried on in a small way and entry into the field is free and easy. Prices and profits are thus in a general way subject to the leveling competitive forces. . . . . For many reasons it is useful to have the oleomargarine industry consist of large scale organizations. By large scale methods it can produce efficiently, it can cover heavy tax costs, and it can maintain its integrity by keeping out the dishonest fringe of small producers who might enter the field if there were no restrictions.[57]

RELATIVE MARGINS IN BUTTER AND MARGARINE MANUFACTURE

It is true that the margarine industry takes a wider margin to cover overhead costs, selling costs, and profits than does the butter-manufacturing industry. In 1939 the average selling price of butter at 3,506 butter establishments was 25.0

[57] *Op. cit.*, pp. 25–26. A release of the National Association of Margarine Manufacturers (January 10, 1939) claims that, during 1925–36, there were 2,384 prosecutions and seizures involving butter, and 14 involving margarine, by the Food and Drugs Administration.

cents per pound, the average direct cost 23.5 cents per pound, and the difference 1.5 cents per pound. For the 18 "primary-product" margarine establishments, these figures were 11.3, 7.6, and 3.7 cents per pound, respectively.[58] Thus, the absolute margin on margarine was 2.2 cents greater, per pound, than that on butter. From this 2.2 cents the margarine manufacturer had to pay a federal tax of at least 0.25 cent per pound. Well over another cent probably went for selling costs. Margarine taxes (particularly those prohibitive taxes on colored margarine) have probably tended to increase these selling costs considerably in order to overcome strong consumer prejudices against this commodity. The increasing differentiation of the products of individual margarine manufacturers has also permitted them, within certain limits, to choose between a lower price of their particular brand and higher selling costs. Within the industry the larger manufacturers have probably favored the latter alternative to the greatest extent.[59]

Even considering these extra selling costs, however, the profit margin is probably greater for margarine than for butter, especially at the manufacturing stage. To the extent that tariff barriers allow, the margarine manufacturer should derive some cost advantage from his greater flexibility in the use of alternative, nonperishable raw materials—a flexibility which the creamery, tied to a single perishable raw material, cannot match. Particularly on the distribution side, however, butter is also handled on a large scale, so that here it is probably not in a disadvantageous cost position. Furthermore, existing consumer prejudices may require a wider retail margin on margarine (even for the most extensively advertised brands) than butter, resulting in a lower wholesale price to the manufacturer.

COSTS OF ENTRY

In so far as the margarine industry does in fact enjoy a wider profit margin than the butter industry, Pabst is correct in emphasizing the fact that costs of entry into the margarine industry tend to protect this wider margin. However, Pabst appears to underestimate the importance of the influence of discriminatory legislation upon entry into the margarine industy. The federal excise taxes on imported oils have limited the economic substitutability between imported and domestic raw materials and at least initially favored certain of the larger margarine firms over the smaller, which were more dependent upon the imported oils.[60] The various state taxes on the sale of margarine and the continuing pressure to raise federal taxes have been even more important. Not only do these taxes

[58] Computed from *Sixteenth Census of the United States, Manufactures*, Vol. I, Part II, pp. 241–42 and 80–82. The selling price per pound was obtained by dividing total value of the primary product by its total production in such plants. Total direct costs include wages, materials, supplies, fuel, and electric energy. The butter establishments produced secondary products to the extent of 8.6 per cent, by value, and the margarine establishments 40.0 per cent. Hence, only 91.4 and 60.0 per cent, respectively, of total direct costs were allocated to butter and margarine to compute direct costs per pound.

[59] According to Snodgrass (*op. cit.*, p. 233), "with most [margarine] manufacturers, advertising costs are an appreciable element of total costs, probably at least 10 per cent." More recent private estimates would suggest that selling costs are currently 1–2½ cents a pound. However, the census establishments for which the above margins apply probably tend to have both lower selling costs and lower selling prices than the many "secondary-product" margarine establishments omitted. At that time there was a tremendous spread between the prices of different brands, say, 8–9 cents, 11–12 cents, and 17–18 cents, at retail, for poor, intermediate, and best quality products. This suggests the great range in quality and the importance of product differentiation in the industry.

[60] Pabst recognized this point, however (*op. cit.*, pp. 47–48). See below, p. 241.

vary widely from state to state but some states tax only animal margarine, others only foreign-vegetable margarine. As a result, costs of production (including technological research) have probably increased, while costs of sales, distribution, and establishing a market have also been enhanced. Most important of all, the uncertainties of future legislative restriction (as for the distilling industry) make the entry of new firms extremely hazardous and tend to protect excessive profits, if any, which existing firms may receive.

We have already noted the strong tendency, especially since 1930, toward larger-scale, diversified, integrated operations by margarine firms. This trend was rather marked in most food industries, serving as a means of better meeting the vagaries of the business cycle, lowering costs of distribution, and gaining a greater degree of market control.[61] In the margarine industry, however, diversification has probably performed the additional important function of rendering less hazardous the uncertainties of margarine's political future. A firm which is producing several products from the same raw materials (such as cottonseed oil) possesses the flexibility necessary rather readily to meet the uncertainties of changing demands for the final products whether induced by shifts in income, tastes, or the legislative will. Furthermore, a large, diversified firm can afford the technical staff and equipment necessary for flexibility in the combination of raw materials for a given final product, however unpredictable are changes in their relative supply conditions and prices.[62] Even total elimination of its margarine business by legislative action could do relatively little harm to a giant concern like National Dairy, Standard Brands, or Swift. But it would mean immediate financial ruin for a smaller, specialized margarine concern. Hence, existing margarine taxation not only makes difficult the entry of new small margarine firms but hastens the elimination or consolidation of the few that yet remain.

[61] See, e.g., A. C. Hoffman, *Large-Scale Organization in the Food Industries* (Washington, 1940).

[62] Cf. Albert G. Hart, "Anticipations, Business Planning, and the Cycle," *Quarterly Journal of Economics*, LI (1937), 287.

LIMITATIONS ON MONOPOLY POWER

Despite the fact that concentration of control in the margarine industry is greater than in the butter industry, there would appear to be important limitations on the extent to which the margarine industry could follow monopolistic price and production policies. Perhaps the most powerful potential competition, in this day of large-scale diversified corporations, is that of existing firms adding a new line rather than the entry of entirely new firms. A firm like Lever Brothers or Procter and Gamble could, with its present facilities, add margarine to its list of products with comparative ease—probably at a relatively low marginal cost—just as Kraft could add vegetable shortenings. This possibility should tend to increase the long-run elasticity of demand for the product of a particular firm.[63] Even though one or a few firms

[63] Cf. J. R. Hicks, "Annual Survey of Economic Theory: The Theory of Monopoly," *Econometrica*, III (1935), 11–12. Lever Brothers and Procter and Gamble have frequently toyed with the idea of producing margarine. However, their present distribution system is probably adapted for less perishable products (cf. above, n. 44). The barriers to a firm like Kraft entering the vegetable-shortening field are apparently greater. Its expensive distribution system is justified by the general perishability of its present products. Large investments in new physical facilities—including oil refineries—would also be required. Refineries would require ramifications into various oil by-products, soap stocks, etc. Finally, it would be very costly for Kraft to buy its way into the quality market for vegetable shortenings.

might emerge as the price leader(s) for the entire margarine industry,[64] the high elasticity of substitution between margarine and the other edible fats (particularly butter) would undoubtedly narrowly limit the possible monopoly gains from such a policy, even if all margarine taxes were eliminated.

The very difference in degree and type of diversification has probably itself been an important limitation upon joint policy within the margarine industry, even toward restrictive legislation directed at its product. The trade associations of few industries, for example, have probably had such a checkered career. Between 1920 and 1936 the Institute of Margarine Manufacturers included all the leading firms of the industry. In the early 1930's, however, this unincorporated association was split wide open on the issue of domestic versus foreign raw materials. The margarine firms which had perfected the cottonseed-oil process "joined forces in spirit at least with those who had previously demanded an effective safeguard against the foreign coconut oil." The ensuing tax-induced shift in raw materials put coconut-margarine manufacturers initially at a marked competitive disadvantage.[65] As a result, a new association, the National Association of Margarine Manufacturers, was incorporated in 1936. In 1940 this association had only nine members, operating twelve plants. Except for Durkee (Glidden) and Capital City, all members were smaller, more specialized concerns —Churngold, Filbert, Miami Butterine, Pearsall, Shedd, Southern States Food, and Standard Margarine.[66] The old Institute continued somewhat informal operations, with a membership consisting only of Best Foods, Jelke, Swift, Armour, Wilson, and Cudahy. The Institute (including the principal cottonseed-oil interests) was committed to a domestic-oils policy, while the Association actively opposed taxes on all margarine, whether made from domestic or foreign oils.[67]

By late 1940, the foreign-fats issue having died down, Jelke and the four meat-packers joined the smaller firms in organizing the National Margarine Institute, which lasted only during 1941. This organization's demise was largely due to differences of opinion over a contemplated industry advertising program and legislative policy. Those firms—such as the meat-packers—with large interests in dairy products were apparently willing to "live and let live," being as much concerned with producer as with consumer relations. Other members—more manufacturer-minded than processor-minded and less diversified—were more anxious to promote margarine aggressively against competing products. As revived in early 1942, the National Association included only Kraft and Durkee of the diversified producers. With the temporarily favorable political

[64] This case suggests an interesting theoretical model. For example, a price leader in the margarine industry might fix margarine prices in some relationship to the price of butter expected to prevail during a certain future period, such as a year. In this sense, the butter industry (even if purely competitive) would in turn serve as the unconscious price leader for the much smaller margarine industry (cf. William H. Nicholls, *Imperfect Competition within Agricultural Industries* [Ames: Iowa State College Press, 1941], pp. 132–37 and 246–50).

[65] Pabst, *op. cit.*, pp. 47–48. This disadvantage was largely on the side of technological "know-how," no patents being involved.

[66] Temporary National Economic Committee, *Hearings*, Part 29: *Interstate Trade Barriers*, p. 15842. The president of this association claimed to represent 53 or 54 per cent of the industry.

[67] Only the Association took part in the attacks on margarine taxation before the T.N.E.C. However, some of the members of the Institute did participate indirectly through their membership in the National Cottonseed Products Association, claiming to represent 80 per cent of the cottonseed-crushing industry (*ibid.*, p. 15824).

climate created by the war, however, industrial harmony was finally restored. At the present time the National Association contains all the principal firms except Best Foods.[68] Nevertheless, the conflicts of interests among firms interested only in margarine, those handling both margarine and dairy products,[69] those in a general food line, and those combining margarine with oil crushing and refining may well arise again in the less propitious days which may lie ahead.[70]

NEED FOR PRICE RESEARCH

Where competing products are handled by the same few large firms, it is conceivable that a degree of monopolistic pricing might be attained which would be impossible if competing products were confined to their own specialized industries. Similarly, the existence of multiple-product firms makes it difficult to speculate as to the probable elasticity of supply of the vegetable oils to individual firms or to the margarine industry. Much depends upon the extent to which sales of edible fats and purchase of raw materials are centrally determined rather than handled independently by the several departments of a given firm. For example, if a firm expands its sales of one edible fat, will it have a significant effect on (*a*) the price of that product and (*b*), if so, on the prices of its other edible fats? Or, on the buying side, will an expansion of one edible-fat department force up the price of its raw material, thereby increasing raw-material costs for other fat products? In either case, does the firm take such interrelationships as may exist into account in determining its selling and buying policies for any particular product?[71]

The present writer is inclined to doubt that such global considerations are of great importance in determining the price and production policies of even the larger factors in the fats and oils field. But only a thoroughgoing investigation of this problem could provide a definitive answer. The need for such a study, complex and difficult though it may be, should be apparent. Meanwhile, of one thing we may be certain. The dairy interests have—through special tariffs and taxes—found powerful political means to give their own industry unique monopolistic protection against competition from a substitute product. To their claim of social beneficence, on "anti-monopoly" grounds, for a clearly "anti-competitive" body of public policy enacted at their behest, an increasing number of low-income consumers—and their organized representatives—are registering a vigorous dissent.

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[68] *Fortune*, November, 1944, p. 184.

[69] In the recent congressional hearings on repeal of the federal tax on colored margarine, both the margarine and the dairy associations represented such member-firms as Swift, Armour, and Wilson. As *Fortune* put it (*ibid.*, p. 186 n.): "The big packers, which make both butter and margarine, avoid split personalities by letting each department operate as if it were an independent business. Their executives do not appear in person before congressional committees in such intermural fights, but are represented by trade associations which their companies support impartially."

[70] In the fall of 1945, with the easing of butter rationing, the few national advertisers were reported still able to sell all they could produce, whereas producers of less well-known brands were meeting considerable difficulty in moving their product. During the next year the entire industry will be fighting to hold part of its wartime gains, each firm trying to keep its own loss of sales below the average for the industry.

[71] For a theoretical treatment of these problems see Nicholls, *Imperfect Competition*, pp. 157–65.

INTEREST AND EMPLOYMENT[1]

M. W. REDER

IN THIS paper an attempt will be made, first, to synthesize the monetary and nonmonetary theories of interest and, second, to show the relationship between the theory of interest and the theory of employment. Despite the considerable discussion of these subjects that has taken place in recent years, it is felt that there is still some confusion in the existing treatment, which the present article attempts both to indicate and to eliminate.

In the first section we review briefly the theory of interest in a nonmonetary society. Section II deals with the particular conditions which money must satisfy in order that the nonmonetary theory of interest be applicable to a society in which there is money. Section III is concerned with the relationship between the rate of interest and the price-level. The theory of employment, in its relationship to the theory of interest, is discussed in Section IV and is elaborated further in Section V.

I

In order to develop a nonmonetary theory of interest, it is necessary to make certain assumptions, some of which are quite unrealistic. But since they have been made so often, we may forego an extended defense and merely list them: (1) tastes, techniques, resources (including personal capacities), and their distribution are given and do not vary; (2) no individual feels any uncertainty concerning any economic decision he undertakes; (3) exchanges can be made without any subjective cost and at infinite speed; i.e., if an entrepreneur wishes to exchange (say) an orange for two bananas, he is indifferent as to whether the exchange is made directly or by any number of intermediate steps; (4) all prices are expected to remain at their current levels; and (5) there is pure competition in all markets.[2]

The second, third, and fourth assumptions are sufficient to define a nonmonetary society; the first and fifth assumptions are made merely for purposes of simplification. If the second, third, and fourth assumptions were satisfied, every individual would be indifferent as to the commodities in terms of which he received and made payments. Hence, any commodity could serve as *numeraire* and standard of value.

In such a world, the "rate of interest" would be defined as "the amount yielded (per period of time) to an individual by lending a fund of *numeraire*, expressed as a percentage of the fund loaned." The individual, given his income and his stock of capital (measured in terms of the *numeraire*), will save an amount (per period of time) depending on the rate of interest.[3] Given the distribution of in-

[1] The author is indebted to W. J. Fellner and H. S. Ellis for reading and criticizing an earlier version of this paper. He is also grateful to the drafting staff of the Board of Governors of the Federal Reserve System for drawing the charts.

[2] It would make no difference if we were to assume given degrees of monopoly and monopsony power of each individual in each market, provided these degrees of power were unchanging. However, this generalization would add nothing to the analysis and would merely complicate the argument.

[3] The absence of uncertainty and subjective exchange cost, together with the belief that all prices

comes among individuals, let us assume, for the sake of simplicity, that aggregate[4] community saving is an increasing function of the rate of interest.

This assumption is reflected in the positive slope of the S curves in Figure 1, which give the amounts saved by the community as a function of the rate of interest. Each S curve refers to a given quantity of capital (its distribution being given) such that the larger the quantity of capital, the higher the subscript. This

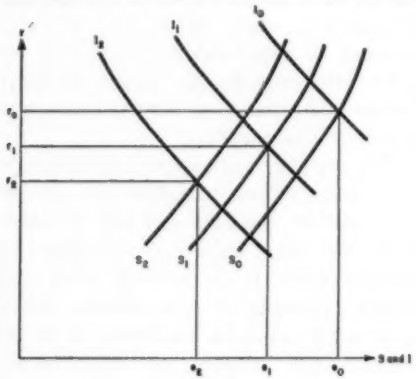

FIG. 1

means that the larger the quantity of capital, the smaller is the amount saved; this assumption, however, is of no consequence for our argument and may be abandoned.

The I curves represent marginal efficiency of investment schedules. The marginal efficiency of investment (in a given type of capital instrument) is equal to the net yield of the instrument (net after maintenance and depreciation are provided for) per period of time, expressed as a percentage of the marginal cost of the instrument. It differs from the marginal productivity of capital in the following way: the marginal productivity of capital is the yield of an extra unit of capital computed on the assumption that the entire system is in long-period equilibrium (at that volume of capital), i.e., that the prices of capital instruments are long-run equilibrium prices (given the volume of capital); the marginal efficiency of investment will coincide with it (the marginal productivity of capital) when these prices actually obtain, i.e., when the system is in a position of long-run equilibrium with zero net investment. If net investment is negative, then the quantity of capital instruments available for producing further capital instruments exceeds the long-run equilibrium quantity, and hence the short-run equilibrium price of capital instruments will be less than its long-run equilibrium price and hence (given the yields of the instruments) the marginal efficiency of investment will exceed the marginal productivity of capital. Conversely, if there is positive net investment, the marginal productivity of capital will exceed the marginal efficiency of investment; and if net investment is zero, the marginal productivity of capital will equal the marginal efficiency of investment.[5]

Given the quantity of capital, additional capital instruments can be produced only at a rising supply price; and hence, given the yields of the various types of instruments, the greater the amount invested (in a given period of time), the smaller will be the marginal efficiency of investment.

will remain unchanged, will make every investor indifferent as to the duration of the securities that he holds; and hence, for analytical purposes, there will be only one security and one rate of interest.

[4] The summation is to be made algebraically, so that negative savings (borrowing for consumption) offset an equivalent amount of positive savings and the ordinates of the S curves measure net saving by society.

[5] This argument is similar to that given by A. P. Lerner, *The Economics of Control* (New York, 1944), pp. 330–38.

Marginal efficiency of investment schedules (the I curves in Fig. 1) may be constructed by adding the (short period) equilibrium amounts that each individual and firm will invest at each rate of interest. Since the marginal efficiency of investment decreases as the amount of investment increases, these schedules will be negatively inclined.

The determination of the rate of interest is shown in Figure 1, where we measure the rate of interest on the r-axis and saving and investment on the S- and I-axis. The I curves show the amount of investment[6] (per period) that will take place at the various rates of interest. Each I curve refers to a specific amount of capital, indicated by the subscript; the higher the subscript, the greater the amount of capital. The diagram is constructed so that the greater the amount of capital in existence, the smaller will be the amount invested at any given rate of interest. However, this assumption may be dropped, since it is of no consequence for our argument.

Given the quantity of capital, the rate of interest is determined by the intersection of the appropriate S and I curves; e.g., if the volume of capital is (say) C_1, then the intersection of the S_1 and I_1 curves determines the rate of interest at r_1 and the amount of saving and investment at e_1. In short, the rate of interest is determined by the equalization of (*ex ante*) saving and investment. This is the "orthodox" nonmonetary version of the determination of the rate of interest, i.e., by the equalization of the supply and demand for savings.[7]

[6] Analogously with the S curves (see n. 4), the ordinates of the I curves measure net investment.

[7] As there is no motive for holding a cash balance in a society of the kind assumed in this model, saving is identical with demanding a security. Hence the S curves may be interpreted as demand curves for securities and, conversely, the I curves as supply curves of securities.

Every point on each S (and I) curve is drawn on the assumption that the economic system is in short-period equilibrium at the existing volume of capital and at the corresponding interest rate. That is, it is assumed that each individual (and each firm) is in equilibrium (given the quantity of capital instruments in his [its] possession and the rate of interest), all other prices having reached equilibrium levels corresponding to that interest rate and capital quantity. Thus the level of community income, which is so important in modern theories of interest, is uniquely determined by the equilibrium conditions of the system and hence cannot play an independent role in determining the positions and shapes of the S and I curves.

In this system all resources are fully employed in the sense that, at equilibrium prices, no resource-owner would change the extent or the manner of its employment, given the functional form and parameters of the system, including the quantity (and distribution) of capital.[8]

The theory here outlined determines the rate of interest as the price at which the *flows* of (*ex ante*) saving and invest-

[8] It should be noted that the assumption that all prices are expected to remain unchanged (assumption 4, p. 243) is extremely unrealistic when applied to a situation in which there is net investment (i.e., capital accumulation). For it implies either (1) that all prices are independent of the quantity of capital or (2) that the individuals in this society make specific systematic errors which somehow do not disturb the complete certainty with which they hold their judgments!

This merely underlines the difficulty in eliminating money from the economic system in a consistent manner. The reader who finds it painful to make either of the foregoing assumptions may avoid them by considering the analysis of this section as applying only to a position of zero net investment—i.e., a stationary state.

ment, with a *given* quantity of capital, are equalized. This is essentially a short-run theory. Many of the nonmonetary theories of interest are, however, long-run theories.[9] In such theories the rate of interest and the equilibrium stock of capital (as above defined) is determined by the condition that the marginal productivity of the existing stock of capital goods (valued at marginal cost of production in terms of a *numeraire*) is equal to the rate of interest at which the community is willing to hold that stock. Should the marginal productivity of the existing stock exceed (fall below) the rate of interest (at which the community is willing to hold the stock), the capital stock will grow (decrease) until it reaches its long-run equilibrium level—where its marginal productivity is equal to the rate of interest at which the community would be willing to hold it.

Such theories as these are a special case of our theory, i.e., the case where the S and I curves (in Fig. 1) corresponding to a given quantity of capital intersect on the vertical axis. The rate of interest thus determined would be the long-run equilibrium rate of interest, and the quantity of capital to which the S and I curves correspond would be the long-run equilibrium quantity.

II

So far, we have discussed the theory of interest on the assumption that no individual bears either risk or uncertainty and that any individual can make exchanges at infinite speed and without incurring any subjective cost. These assumptions imply that all exchange rates, present and future, are known with certainty by everyone. Under such circumstances, any transferable commodity will be accepted in exchange for any other, without resorting to the use of an intermediary commodity, money, since any commodity may be exchanged, instantaneously and without trouble, for any other at a known rate. In consequence, no one would prefer to hold wealth in the form of one commodity rather than another; i.e., no commodity would have a liquidity premium. Such an economy would be a nonmonetary economy; and the rate of interest that existed within it, a nonmonetary, or "natural," rate. Needless to say, such an economy is far removed from a modern economic system in which money is omnipresent.

In a modern economic system the commodity that serves as money is that which is the most "liquid" of all commodities. The factors that affect the liquidity premium that attaches to a particular commodity have been discussed in great detail by Lord Keynes and require no further treatment here.[10] In a monetary society it is necessary, in order to carry on production, that an individual hold a cash balance; and the greater the value of input (and presumably, output), the greater is the equilibrium size of this cash balance.

In order to understand properly the relation between the quantity of money and the rate of interest, it is necessary first to ascertain the conditions under which variations in the excess demand for cash do not affect the rate of interest.[11] A sufficient, although not necessary, condition for the rate of interest to be independent of variations in the excess

[9] E.g., the capital theories of J. B. Clark, Knut Wicksell, E. von Böhm-Bawerk, etc.

[10] J. M. Keynes, *The General Theory of Employment, Interest and Money* (New York, 1936), chap. xvii.

[11] We shall, for the sake of simplicity, continue our assumption that there is only one type of security and hence only one rate of interest.

demand for cash is that the excess demand for cash balances is independent of the excess demand[12] for any other commodity (including, *à la* Hicks, future commodities). If this condition is satisfied, then an increase in the excess demand for cash cannot affect relative prices and consequently cannot affect the I and S curves; when this condition is satisfied, we shall say that money is "neutral."[13]

For an excess demand for cash, under these conditions, merely means that persons wish to hold more cash, at the going price-level, than there is in existence and hence are unwilling to buy the entire output of all commodities at their current money prices. This tends to make product prices fall, and (since the excess demand for cash is independent of the excess demand for any other product) all other prices fall proportionately until the excess demand for cash is eliminated. If the supply of cash has a zero price elasticity, the price-level will fall (until equilibrium is reached) unchecked by any increase in supply; if the supply has an infinite elasticity, then the price-level cannot vary at all; and between these extremes the fall in the price-level will be the greater, the smaller the price elasticity of supply of cash balances.[14]

It should be noted that the foregoing argument made the *price-level*, and not the rate of interest, equate the demand and supply for cash balances. This may appear rather strange, since in "monetary" interest theories it is argued that it is the rate of interest that equates the supply and demand for cash balances and not the general price-level. Actually, there is no contradiction between the two statements; the rate of interest is uniquely determined by the rate of exchange between securities andcash, and hence the rate of interest that is determined must be compatible with the equality of the demand and supply of cash balances. However, under the assumption of neutral money, all prices change proportionately, *including* effective[15] *expected future prices*, which means that the price of securities and their effective expected yields in each period of time change proportionately with all other prices, and thus the rate of interest is unaffected by variations in the demand and/or supply of money.

[12] The excess demand for one commodity, X, is independent of, competitive with, or complementary to the excess demand for any other commodity, Y, against a third commodity, Z, if an increase (decrease) in the excess demand for X in terms of Z leads to no change, an increase (decrease), a decrease (increase) in the excess demand for Y in terms of Z. Thus, if the excess demand for money is independent of the excess demand for any one other commodity in terms of any other, the exchange ratios between all other commodities are independent of what happens to the exchange ratio between money and any one of them; i.e., all money prices change proportionately and we may speak, without ambiguity, of a "price-level."

[13] This definition of neutral money is identical with that given by O. Lange, "Say's Law: A Restatement and Criticism," in *Studies in Mathematical Economics and Econometrics in Memory of Henry Schultz*, ed. O. Lange *et al.* (Chicago, 1942).

[14] Such an argument as this presupposes the existence of a demand curve for cash balances as a function of the price-level. That is, it presupposes that persons desire to hold a certain portion of their real wealth in the form of a cash balance and that, in consequence, the higher the price-level, the greater will be the physical number of "cash units" that will be demanded. Such a demand curve is implied in the Cambridge Quantity Equation. Some economists, notably Wicksell, failed to postulate such a demand curve for cash and thus, implicitly, made the excess demand for it identically equal to zero. This meant that the system would be in equilibrium at any price-level; thus making the price-level indeterminate. (Cf. J. R. Hicks, *Value and Capital* [London, 1939], pp. 251–55.)

[15] The concept of *effective* expectations (of future prices) is introduced and explained by O. Lange, "A Note on Innovations," *Review of Economic Statistics*, February, 1943, pp. 19–25.

III

Let us explore the meaning of the assumption of neutral money a bit further. The marginal efficiency of money must be the same, in a position of equilibrium, as the marginal efficiency of any other asset. An individual is willing to hold a portion of his wealth in the form of cash (when his effective expectations of future prices are identical with the present prices) only because of the greater convenience in holding a cash balance instead of buying a security every time he

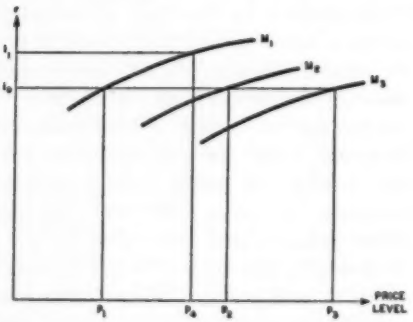

FIG. 2

obtains a receipt and selling one every time he desires to make a purchase. The value of this convenience provided by another dollar (per period of time) must be equal to the rate of interest—otherwise he would diminish (or increase) the size of his cash balance in favor (at the expense) of his stock of securities. As the rate of interest is uniquely determined by the rate of exchange between securities and cash, it would therefore seem that changes in the stock of money would affect it.

However, this will not be true if money is neutral. To illustrate this we have constructed Figure 2. In this figure the vertical axis measures the rate of interest and the horizontal axis the price-level. Each M curve refers to a given quantity of money, the quantity varying in the same direction as the subscript, and is drawn on the assumption that the system is in a given position of short-period equilibrium as described on page 245. The positive slopes of these curves reflect the common-sense assumption that the higher the price-level (rate of interest), given the rate of interest (price-level), the greater will be the convenience of (the greater will be the sacrifice of income in) holding a cash balance of any given size. Their concavity from below implies that the higher the rate of interest, the greater must be the increase in the price-level to cause enough inconvenience (from insufficient cash balances) to induce the members of the community not to lower their aggregate money stocks because of a *further* unit increase in the rate of interest. (It is not necessary, for our argument, to assume that the curves are concave from below.)

Suppose that, given neutral money, the short-run equilibrium rate of interest, determined by the intersection of the *ex ante* saving (demand for securities) and investment (supply of securities) curves, shown in Figure 1 (the appropriate curves being determined by the extant volume of capital), is i_0. Then, if the quantity of money in existence were M_1, the price-level would be p_1. If the quantity of money were M_2, the price-level would be p_2; and if the quantity were M_3 the price-level would be p_3.

If there is neutral money, the ratio of the present price of each commodity and each factor to its effective expected price at any moment of time in the future, l_1, will be unity. But let us suppose that we depart from the assumption of neutral money (*but in this one respect only*) and assume that this ratio is (say) 1.1 for

each moment in the future.[16] This means that the marginal efficiency of every dollar invested will be 10 per cent greater than it would be if money were neutral. In terms of Figure 1, each ordinate of each I curve will be shifted upward by 10 per cent. This will result in an increase in the rate of interest, providing the S curves are positively inclined. Therefore, given the shape of the S curves (in Fig. 1), there will be one rate of interest corresponding to each ratio of present to expected effective future prices. Therefore, we may measure both variables on the same axis of Figure 2. Corresponding to a ratio of 1.1, let there be an interest rate of i_1, which, given the quantity of money as M_1, makes the price-level p_4, higher than p_1. If the ratio were less than 1 (say 0.9), then (assuming the S curves to be positively sloped and the quantity of money to be M_1) the equilibrium rate of interest would be less than i_0 and the price-level less than p_1.

Thus the rate of interest and the price-level are related.[17] Of course, our analysis refers to a short-period equilibrium position and not to a long-period. It might be possible to argue that, in the long run, money tends to become neutral and that, in consequence, the long-period equilibrium rate of interest will be identical with the (long-period equilibrium) rate that would obtain if money were neutral. However, it is by no means obvious that such an argument would be true. We may, of course, *define* a position of long-period equilibrium as one in which neutral money (among other things) exists, but then it will by no means follow that there is any tendency for such a position to be reached.[18]

[16] In other words, we assume that (1) the equilibrium set of price ratios between any pair of commodities referring to the present moment and (2) the effective expected price ratios between any pair of commodities referring to any *one* future moment are the same as they would be if money were neutral. It is only the ratio between the price of a given commodity at the present moment and its effective expected price at any future moment (or between the effective expected prices at any two future moments) that may vary.

However, departures from the neutrality of money in one respect tend to beget departures in other respects as well, and it is necessary to make a further special (and unrealistic) assumption in order to make the above assumptions compatible with an equilibrium position. If assumptions 1 and 2 were both satisfied, and effective expected future prices were different from present prices, then there would be a tendency for the intertemporal substitution of factor services which would affect the quantities currently used and thus affect the level of income. This would destroy the relationship depicted in Fig. 2 by introducing another variable into the system—the level of income. In order to avoid this, we shall assume that the supplies of the factor services depend *solely* on current prices and not at all on expected future prices.

This assumption is somewhat arbitrary, although, so far as labor is concerned, perhaps not too unrealistic; i.e., the supply of current labor is not likely to vary greatly with changes in expected real (or money) wage rates. However, the realism (or lack of it) of this assumption is rather irrelevant, as the only purposes in making it are (1) to enable us to eliminate income as a variable, while at the same time dropping the assumption of neutral money, and (2) to eliminate the possibility of intertemporal substitution of factor services and thus insure that money will be "unneutral" in only one respect. Making this assumption, in effect, enables us to examine the properties of a model in which monetary occurrences affect the rate of interest without affecting the level of income. Such models are of theoretical interest, since they show the influence of monetary factors on the rate of interest with the level of income (and employment) constant. The usual monetary theory of interest, e.g., the Keynesian, makes the level of income a separate variable of the system and thus obscures the effect of price expectations on the interest rate.

[17] If we make the supply of money depend on the rate of interest, as is sometimes done, then the rate of interest will uniquely determine the price-level.

[18] If we do define a long-period equilibrium position in such a way that it involves neutral money, then our short-period is merely a time interval (in the adjustment period to the long-period equilibrium position) defined by the conditions that the stock of each type of plant and equipment is constant in quantity but that labor and raw materials are mobile to some specified extent. The extent to which they are mobile defines the shapes of the curves (in Fig. 1); the less mobile they are, the steeper will be

The Cambridge Quantity Equation, which makes the price-level, but not the rate of interest, depend upon the stock of money, would be represented in Figure 2 by a set of straight lines parallel to the vertical axis—one line for each quantity of money. The greater the quantity of money, the higher would be the price-level; but the rate of interest would be completely independent of changes in the quantity of money, irrespective of whether money is neutral.

Let us now consider briefly the effect of capital accumulation on the (short-period equilibrium) rate of interest when money is unneutral, but only in the foregoing respect. Given the quantity of money and the assumption that the demand for cash balances, in real terms, increases with the community's stock of capital (which seems plausible), the sole effect of capital accumulation under neutral money would be to reduce the price-level; all other variables of the system would be unchanged. However, if the fall in prices were to lead to effective expectations of future prices that are still lower, then the *I* curves (in Fig. 1) would be shifted downward, thereby diminishing the short-run equilibrium rate of interest. If the effective prices were expected to decline (per period) at a rate equal to the marginal efficiency that any given quantity of investment would have under neutral money, then the marginal efficiency of that quantity of investment would be zero; i.e., the value of the marginal physical yield of that quantity of investment (per period) would be exactly canceled by the decline in the money value of the capital instrument during the period.

Of course, there is no necessity for the quantity of money to remain constant in the face of capital accumulation. The foregoing argument merely serves to emphasize the positive nature of the task confronting the monetary authorities in preventing capital accumulation from having untoward effects on the price-level, the interest rate, and the volume of investment.

IV

Hicks,[19] in his discussion of the relationship between the rate of interest in a nonmonetary economy (which, following Wicksell, he calls the "natural rate") and the "money" rate of interest, asserts that the two will be equal if the value of money is not expected to change and if this belief is held with certainty, i.e., if present prices are equal to expected effective future prices. However, this is not a sufficient condition (as will be shown below) for the two to be equal,[20] while, as we have seen above (pp. 248–50), it is sufficient (for the two rates to be equal) for money to be neutral.

To show that the "actual" equilibrium rate of interest may differ from the equilibrium rate under neutral money (*even though present prices are equal to expected effective future prices*), let us assume that

the average slope of any *I* curve in a given range, i.e., the more rapidly will the marginal cost of any kind of capital good rise with respect to increases in output and hence (given the yields of the various instruments) the greater will be the decline in the marginal efficiency of investment corresponding to any given increase in its quantity (per period of time). There will, of course, be one set of price ratios corresponding to each volume of investment and hence (given the shapes of the *S* curves) one set for each rate of interest. This introduces the familiar, and troublesome, problem of defining the price-level (which is measured on the horizontal axis of Fig. 2); however, we do not wish to enter into a discussion of index-numbers, and consequently we shall simply beg the question and say that the price-level is defined by any "suitable" index-number.

[19] *Op. cit.*, p. 160.

[20] Although we shall not trouble to do so, it would not be hard to prove that it is not a necessary condition, either.

expected future prices are equal to present prices, but that the labor supply is a function solely of the money (and not of the real) wage rate and that (in the vicinity of the equilibrium position) the supply of labor (in terms of money wage rates) is infinitely elastic.[21]

One of the system's (short-run) equilibrium conditions is that the marginal physical productivity of labor, multiplied by the price-level, must equal the money wage rate. Therefore, either the price-level will vary proportionately with the money wage rate or the level of real income will vary in the opposite direction. Note that the level of real income (on our assumptions) is a unique function of the volume of labor employed.

In Figure 3 we measure the price-level on the horizontal axis and the level of income on the vertical axis (assuming its distribution at each level to be given); each w curve gives the various combinations of income and price levels that are compatible with a given money wage rate. The shapes of these curves are determined by the marginal physical productivity (of labor) function; given the money wage rate (price-level) the higher the price-level (money wage rate), the greater (smaller) will be the amount of labor employed and hence the greater will be the level of (real) income. In view of this, Figure 3 is drawn so that the higher the index of the w curve, the higher will be the wage rate to which it corresponds. The curves are concave from below because of our assumption of diminishing marginal physical returns to labor.

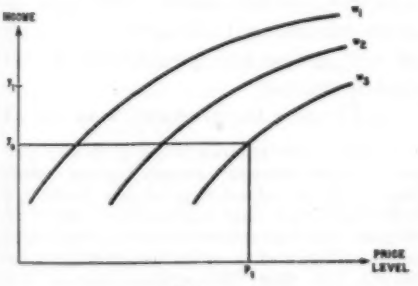

FIG. 3

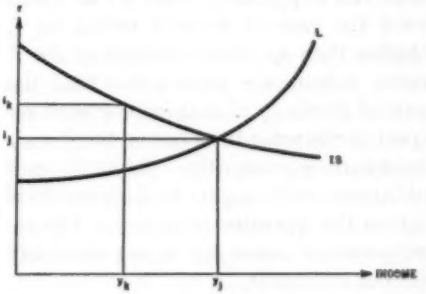

FIG. 4

Since we can, given the quantity of money, determine a unique relationship between the price-level and the rate of interest from Figure 2, we can also determine, given both the money wage rate and the quantity of money (from Figs. 2 and 3), a relationship between the rate of interest and the level of income. This relationship is described by the L curve in Figure 4; the curve has a positive slope because (given the money wage rate and the quantity of money) both the rate of interest and the level of income are uniquely determined by the price-level (from Figs. 3 and 4) and both increase as the price-level increases.

To put it another way, the equilibrium of the system requires that the price-level in Figure 2 should be the same as the price-level in Figure 3. Thus, if the quantity of money were M_1, the money

[21] This assumption is identical with Lord Keynes's assumptions concerning the supply of labor. To make our results comparable with his, and because it makes no serious difference in our argument, we shall assume that there is only one kind of labor and that all other variable factors, e.g., raw materials, vary proportionately with it.

wage rate were w_3, and the price-level were p_1, then income would be Y_0 and the rate of interest, i_0. In order for income to rise to Y_1 (higher than Y_0), given the quantity of money at M_1 and the money wage rate at w_3, the price-level must rise to p_4 (higher than p_1), at which level the rate of interest would be i_1 (higher than i_0). The convexity of the L curve reflects the assumption that the partial elasticity of real income with respect to the price-level (given the money wage rate) is greater than that of the rate of interest with respect to the price-level (given the quantity of money). The assumption of convexity is not necessary for our argument.

The IS curve in Figure 4 may be derived from Figure 1 if the latter is reinterpreted so that all curves refer to the same volume of *capital* but that one pair of S and I curves refers to each level of *income*. Given the rate of interest, the greater the level of income, the greater will be the amount saved; and, hence, the greater the level of income, the lower will be the index of the S curve. However, this will not be true of the I curves; given the money wage rate and given that effective future prices are expected to be the same as present prices, the marginal efficiency of any quantity of investment will vary with the marginal physical productivity of labor. Since there is only one kind of labor (and raw materials, power, etc., are assumed to vary proportionately with it), it follows that its marginal physical productivity would decline as the amount of it employed on a given volume of capital increased; i.e., the marginal physical productivity of labor, and hence the marginal efficiency of any given quantity of investment, diminishes with the volume of employment and/or with the level of income. Thus, the higher the level of income, the lower will be the marginal efficiency of investment curve. Therefore, the higher the index of the I curve, the higher will be the level of income to which it corresponds.[22]

As the schedule of investment moves to the left as income increases, while that of saving moves to the right, it is likely (but not necessary) that the IS curve, the locus of the intersections of the I and S curves corresponding to a given level of income, will be negatively inclined. The ordinates of the IS curve give the rates of interest at which *ex ante* saving would be made equal to *ex ante* investment at the corresponding level of income. Thus, if the level of income were Y_k, the rate of interest that would equate *ex ante* saving and investment would be i_k; if, however, the rate were i_j, less than i_k, *ex ante* investment would exceed *ex ante* saving and the level of income would expand until it reached Y_j, where *ex ante* saving and investment become equal at the interest rate i_j. If the rate of interest were to exceed i_k (when income was Y_k), a reverse process would occur until income was reduced sufficiently to equate *ex ante* saving and investment at that rate of interest.[23]

In Figure 4 the intersection of the IS

[22] The I curve, referring to any given level of income, slopes downward because we are assuming that, as the volume of investment increases, it is necessary to use plant and equipment that is less efficient (with a given labor force) either because it is less well adapted to producing capital goods or because it is older. The negative slopes of the I curves cannot be explained by diminishing returns to labor because there is only one kind of labor, and because, with a given income, its marginal physical productivity is uniquely determined.

[23] Our IS curve is very similar to the IS curve in Fig. 3 of J. R. Hicks, "Mr. Keynes and the 'Classics': A Suggested Interpretation," *Econometrica*, 1937, pp. 147–59. Superficially, it might also seem that our L curve (in Fig. 4) is analogous to his LL' curves. However, it is not, because Hicks does not include either the price-level or the money wage rate (explicitly) in his analysis.

and L curves determines the equilibrium rate of interest and level of income; i.e., the intersection of the two curves is a position where the rate of interest that equates *ex ante* saving and investment, at the corresponding level of income, is also a rate (given the quantity of money) that determines a price-level (via Fig. 2) that is compatible with the price-level determined (given the money wage) via Figure 3.

The position and shape of the L curve depends on both the money wage rate and the quantity of money. The higher the money wage rate (given the quantity of money), the higher will be the ordinate of the L curve at each level of income; i.e., the higher the money wage rate (given the volume of employment and hence the level of income), the higher will be the price-level and hence (given the quantity of money) the higher the rate of interest. The larger the quantity of money (given the money wage rate), the lower will be the ordinate of the L curve at any given level of income; i.e., the larger the quantity of money (given the money wage rate and consequently the price-level at any given level of income), the lower will be the rate of interest at any given level of income. In short, under these conditions, monetary policy and the rate of interest depend not only upon the quantity of money made available by the banking system but also upon the money wage rate that is set—i.e., not only by the banking system but also by the trade-unions.

It is worthy of notice that it is not only the rate of interest that is determined in this manner but also the level of real income and the volume of employment. These last two quantities now appear as variables to be determined by the equilibrium conditions of the system, because the money wage rate is assumed constant. Previously, when the money wage rate was treated as an unknown, to be determined by the equilibrium conditions of the system, there was no occasion for a separate consideration of income and employment.

V

The system sketched in the previous section may be readily identified, in all essential respects, as the Keynesian system. It differs from the one discussed in Section III in that the latter assumes that the supply of labor is a function solely of its current real wage rate and that the money wage rate varies until the real wage rate reaches a level such that the supply of and demand for labor are made equal.[24] It was shown in Section IV that, in order to make different levels of income (and the volumes of employment) compatible with the equilibrium of the system, it is sufficient to assume that the supply of labor is a function of the money wage rate and that its elasticity (with respect to the money wage rate) is infinite in the vicinity of the equilibrium position.

However, Franco Modigliani, in a recent paper,[25] has gone further and argues (in effect) that, if money wage rates behave as they do in the model discussed in Section III and if effective future prices are expected to be the same as present prices, then the rate of interest and the levels of income and employment will be determined solely by the "real" part of the economic system, i.e., that changes in the demand and/or supply of money will not affect these vari-

[24] The systems also differ in that the model in Section IV assumes that present and expected effective future prices are equal, whereas the model in Section III does not.

[25] "Liquidity Preference and the Theory of Interest and Money," *Econometrica*, January, 1944, pp. 45–88, esp. pp. 64–76.

ables. But this condition, while more general than the one given by Hicks (see p. 250), is still not sufficient to establish this conclusion. In order for the rate of interest to be independent of monetary phenomena, money must be neutral;[26] and it may be unneutral, while satisfying Modigliani's conditions. For example, if the supply of labor is a function of *both* the real and the money wage rates, money will not be neutral but Modigliani's condition will be satisfied. Only the extreme case, where the supply of labor is dependent *solely* on the real wage rate,

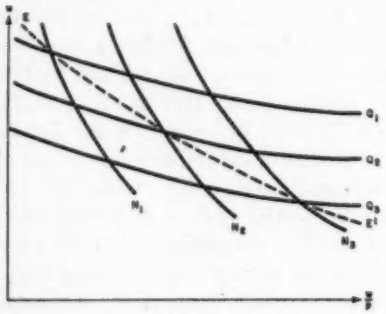

FIG. 5

is compatible with neutral money. Lord Keynes's "General Theory" (identical with that sketched in the preceding section of this paper) goes to the other extreme and makes the labor supply a function solely of the money wage rate. The two extreme cases bound a whole field of intermediate ones and suggest the need of a more general theory that would cover all these cases.

The framework of such a theory is suggested by Figure 5—on the w-axis of which is measured the money wage rate, and on the w/p-axis the ratio of the money wage rate to the price-level. Each of the N curves is the locus of all possible combinations of real and money wage rates that will evoke a given labor supply. Assuming, for convenience, that the supply of labor is an increasing function of both the current real and the money wage rates[27] (and that future wage rates are expected to be the same as the present), the higher the index of the curve, the greater will be the supply of labor to which it corresponds. The downward slope of the curves reflects the assumption that there is some increase in money wage rates that will offset a cut in real wage rates and hold the supply of labor constant; our ignorance concerning the relevant facts makes pointless a further specification of the shapes of these curves. The Keynesian assumption of the infinite elasticity of the supply of labor with respect to the money wage rate (at least over a certain range of employment) would be represented by drawing the N curves parallel to the w/p-axis; the "classical" assumption that the supply of labor is a function solely of the real wage rate would be illustrated by drawing the N curves parallel to the w-axis.

Each Q curve gives the various combinations of real and money wage rates at which a given quantity of labor will be demanded, given the other variables of the system. Since we are assuming diminishing marginal physical returns to labor, the demand for labor is a decreasing function of the real wage rate; and since we are assuming that the L curve in Figure 4 shifts upward as the money wage rate rises (given the quantity of money), the level of income (and hence employment) is a decreasing function of the money wage rate also. Conse-

[26] Or the rate of interest must arbitrarily be assumed to be unaffected by monetary conditions, as in the Cambridge Quantity Equation (see above, p. 250).

[27] The implications of other sets of assumptions may easily be developed by the reader.

quently, the Q curves will be convex to the origin; furthermore, at any given point on the w/p-axis, the greater the height of w co-ordinate, the smaller will be the volume of employment to which it corresponds. Consequently, in Figure 5 the greater the index of a Q curve, the larger will be the volume of employment to which it refers.

The intersection of a Q and an N curve, with the same subscripts, determines the equilibrium real and money wage rates corresponding to the volume of employment (and income) indicated by that subscript; the EE' curve is the locus of these equilibrium positions. The determination of the equilibrium real and money wage rates may be understood from the following considerations: for each real wage rate there is an equilibrium volume of employment to which there corresponds a level of income. Thus, to each abscissa of the EE' curve there corresponds a level of income (in Fig. 4). But each ordinate of the EE' curve defines a unique money wage rate which (given the level of income) uniquely determines the price-level, and this (given the quantity of money) determines the rate of interest and thus the height of the L curve at that level of income. The point where the L curve intersects the IS curve determines the equilibrium level of income to which there corresponds a unique volume of employment. The Q curve corresponding to this level of income is the equilibrium volume of employment, and its intersection with the EE' curve determines the equilibrium real and money wage rates.

The "neutral money" assumptions would be represented by N and Q curves parallel to the w-axis, curves with the same index coinciding throughout their lengths, indicating that the equilibrium volume of employment is independent of the money wage rate.[28] Under Keynesian assumptions the Q curves will slope downward to the left, as in Figure 5; but the N curves will be parallel to the w/p-axis (at least for a certain range of employment), as indicated above.

There has been no little debate on the proper assumptions to make concerning the variables in the supply function of labor. That is, should the supply of labor be a function of the real wage rate alone, of the money wage rate alone, or of both? Obviously, such a question can be answered only by empirical study, but some a priori considerations may serve to clarify the issues somewhat.

Much of the debate might be resolved if the length of the adjustment periods (within which persons are assumed to vary their decisions to work—and the extent to which they do so—according to changes either in the money wage rate or in the prices of the things they buy) were specified. If we assume either that persons adapt themselves instantaneously to changes in prices (including wage rates) or if we assume that they have an arbitrarily long period of time in which to vary their decisions, we are assuming (implicitly) that previous prices (including money wage rates) have no effect on the supply curve of labor in terms of money.

Given either of these assumptions, it *may* be plausible to assume that the supply of labor is a function solely of the real wage rate. That is, it might be plausible to assume, in dealing with positions of long-run equilibrium, that the supply of labor is a function solely of the real wage rate.[29] In shorter periods, however, the

[28] It should be noted that neutral money implies not only that the *supply* of labor is independent of the money wage rate but also the demand.

[29] It must be emphasized, however, that this is an *assumption:* there is nothing in the concept of long-

supply of labor will almost certainly depend, in part, on the money wage rate, because it requires some time before workers (or union leaders) can adjust themselves to a changed price-level. The longer the period of time allowed for adjustment, the more responsive should be the supply of labor to changes in real wage rates (and the less responsive to changes in mere money rates). Consequently, it would seem plausible to assume that the longer the period of time allowed for adjustment, the steeper will the N curves (in Fig. 5) become—at the limit becoming parallel to the w-axis, indicating that the supply of labor depends solely on the real wage rate.

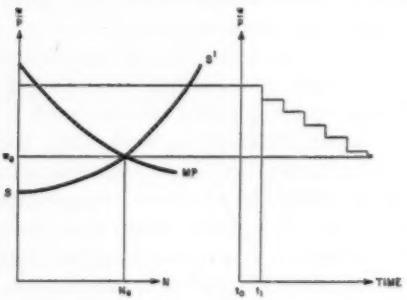

FIG. 6

In the light of this argument the Keynesian assumption that the supply of labor depends (for a certain range of employments, at least) solely on the money wage rate becomes an assumption that applies to a very short period only.

This may be made more clear by the use of Figure 6, where we measure real wage rates on the w/p-axis and the volume of employment on the N-axis. The MP curve gives the marginal-value productivity of labor (its demand curve), and the SS' curve gives the supply of labor as a function of the real wage rate; thus the equilibrium volume of employment is N_e and the long-run equilibrium real wage rate, w_e. Let us assume (1) that at some moment of time, t_0, the money wage rate was that corresponding to a real wage rate of w_0 (greater than the money wage rate corresponding to w_e); (2) that an excess of the actual, over the equilibrium, money wage rate causes a decline in the money wage rate; and (3) that a decline in the money wage rate causes a decline in the real wage rate. This implies that the real wage rate moves in the same direction as the money wage rate, which is the case, given the quantity of money; for increases (decreases) in money wage rates shift the L curve (in Fig. 4) upward (downward) and thus decrease (increase) income and employment (unless the change in money wage rates greatly affects the marginal efficiency of investment schedule)[30] and increase (decrease) the marginal productivity of labor and hence the real wage rate.

If this decline takes place discontinuously through time (say, at intervals of $t_1 - t_0$) but the money wage rate is constant within these intervals, then the Keynesian theory will apply within these time intervals,[31] $t_1 - t_0$. That is, the other variables of the system will find equilibrium values during these periods, the money wage rate being a parameter. At

run equilibrium that implies that persons should not attach a prestige value to money incomes and thus include money income as a variable in their utility functions.

[30] This may happen if the change in money wage rates leads to effective expectations of further changes—this means that the MP curve in Fig. 8 will shift. In such cases the labor market may be unstable; this may be a very serious practical problem, but we cannot discuss it here.

[31] These intervals may be thought of alternatively as the periods of time for which wage contracts are made by trade-unions or as the time periods necessary before workers (or their leaders) can make any reaction to changes in the price-level.

the end of these periods the money wage rate will change and the other variables of the system will find new equilibrium values. The volume of employment would increase through time (given the quantity of money), since the lower the money wage rate, the lower will be the rate of interest; the greater the volumes of income and employment, and the lower the real wage rate.

The "classical" economists implicitly assumed that this process leads to the equilibrium (full employment) money wage rate that corresponds to the real wage rate, w_e. But this must be postulated, since there is nothing in their (or any conceivable) argument concerning equilibrium conditions that could prove it. The rate w_e might very well be the only real wage rate at which the system could reach a position of stable equilibrium that would persist through time, given the quantities of capital goods and the stock of money. But that would not prove that this position would be reached or even approached.

If we assume that the adjustment of the money wage rate to the level corresponding to the real wage rate, w_e, does not take place instantaneously, then the supply of labor corresponding to a given money wage rate will vary (as we have seen), depending on the length of the adjustment period. And these variations affect the volume of employment, the level of income, and the rate of interest. In short, it is not necessary to assume that money wage rates are "rigid," *à la* Keynes, in order to permit variations in the quantity of money to affect the level of employment and income. It is necessary to assume only that the supply of labor depends on the money, as well as on the real, wage rate.

Consideration of the resulting possibilities involves the creation of a somewhat more complicated version of the model we have already developed. In such a model the number of possible time-paths that the wage rate may take is extremely large, and a priori speculation suggests that "almost anything may happen." The task of economic analysis then becomes one of properly narrowing the assumptions so as to get more specific results. However, this task is not within the scope of this paper.

BROOKLYN COLLEGE

SOME IMPLICATIONS OF FULL-EMPLOYMENT POLICY

ALBERT L. MEYERS

THE desirability of full employment as one end of our economic activity seems to be fairly well agreed upon among both economists and the general public. Controversy in recent years has largely centered around the means of attaining the end. The general problems of deficit financing and the burden of the debt, although perhaps not solved to everyone's satisfaction, have received a sufficient airing so that we may consider them only incidentally here. The closer we approach the adoption of a full-employment fiscal policy, the more attention must be focused on the details of such a policy and on their possible consequences.

Much of the opposition to a full-employment policy or, more particularly, to deficit financing as a means of implementing such a policy has been based, implicitly or explicitly, upon the fear of steady or rapid encroachment of government in the field of private enterprise. The arguments of proponents of the policy have done little to allay these fears, if, indeed, they did not tend to augment them.

The Keynes-Hansen thesis adopted as the explanation of unemployment by most advocates of full-employment fiscal policy is that planned private investment is not sufficient to absorb planned saving, leaving a "deflationary gap" in consumption and employment. The various forms of "government investment," "deficit financing," and "government spending" are advocated as a means of "taking up the slack" left by the failure of investment to absorb savings. If we accept this explanation of unemployment and are not advocating increasing socialization of the economy, it would seem to be a reasonable test to propose for employment policy that it be, at best, encouraging to private investment and, at the worst, neutral to, or not discouraging to, private investment. Conceivably a policy might encourage private investment in some fields while discouraging it in others. The test would then be whether the induced private investment were greater than that which is inhibited. It is, of course, possible that a given volume of private investment which is discouraged may be offset with a much larger volume of government investment or spending. This last, however, tends to be in the nature of a counsel of despair and must be more suspect the greater the volume of private investment displaced. In the light of these tests we may proceed to examine full-employment fiscal policy somewhat more closely.

SECULAR STAGNATION AND THE PROPENSITY TO INVEST

It seems to the present writer that some of the proponents of full-employment fiscal policy have unnecessarily weakened their case by insistence on the hypothesis of secular stagnation. Assuming that government employment policies are so designed as to offer the minimum of impediment to private investment, we may examine the effects of sustained full, or nearly full, employment on possible private investment activities.

A sustained high level of employment and demand will increase the wear and tear and depreciation of machine and equipment. While accelerated replace-

ment may not be so important as large expenditures for new capital investment, the effects of greater regularity in the demand for machine tools should be salutary. Deferred maintenance has long been recognized as one of the contributing factors to the spiral of deflation. It may be objected that obsolescence is as important as, or more important than, depreciation in causing replacement of machines. Here again, however, the influence of the cycle may be important in determining the rate of replacement. A new and more efficient machine may be on the market but the businessman may not buy it to replace an old but still serviceable machine if he anticipates that a present high level of demand will not last more than a year or so. The age dispersion of railroad locomotives is evidence of this tendency. It is the regular practice of the railroads to store antiquated locomotives and to use them only to handle traffic peaks. A sustained high level of traffic would result in a much more rapid rate of replacement of old locomotives by modern efficient motive power. In general, it may be said that the more it is anticipated that demand will be steady at a high level the smaller need be the gain in efficiency of a new machine to insure its rapid adoption. This is one way in which a full-employment policy may increase the "marginal efficiency of capital" and hence increase the propensity to invest.

One of the most important elements to be considered is the possible effect of a stabilization policy upon the liquidity preference of business firms and corporations. The only reason for the favor in which "a high ratio of current assets to current liabilities" is held by the business community is the ability which it gives the firm to meet demands for cash in times of reduced demand for its product. Experience with a long period of sustained demand or with a cycle whose amplitude is very greatly damped should result in a downward revision of the cash balances and liquid assets which corporations find it desirable to hold. This might result in a greater investment of corporate savings, in a more liberal dividend policy, or in a combination of the two. In any event the "evil" of large uninvested corporate savings about which the Keynesians complain should be considerably mitigated.

The general stimulus to strictly new investment of a sustained level of employment and demand must not be underestimated. (We are assuming here that specific means of full-employment policy will be either "neutral" or encouraging to private investment.) In the past each innovation has had to face the risks both of its specific acceptance and of a business recession in its early years which might result in insolvency or bankruptcy before the innovation was fully accepted. Removal or reduction of the latter risks should make investors far more ready to assume the single risk of acceptance of the innovation.

If full employment meant complete absence of unemployment, of course any innovation would be confronted with the difficulty of attracting workers away from their present jobs. If full employment means an equal number of jobs available and of unemployed, however, the innovation may be able to draw its workers from the "frictionally unemployed." And if the government is employing workers merely to take up the slack in private employment, these can be released to the new industry if the government is aware of the demand.

In addition to innovations there are many kinds of what might be called "capital improvement" which might be undertaken in sustained employment but which either are not undertaken or

are greatly retarded under conditions of fluctuationg revenue. Conspicuous examples are the elimination of grade crossings and the straightening of curves and leveling of grades on railroads. These investments may easily pay for themselves under conditions of sustained heavy traffic—grade-crossing elimination through reduction of damage suits; straightening of curves and leveling of grades through time- and fuel-saving and through elimination of double-heading. Many of them, indeed, will pay out in the long run over an average of fluctuating traffic. But, because they represent a small saving in operating costs spread over a long period of time, the railroads are naturally hesitant to engage in them if there is any threat of a serious fall in traffic within a few years.

The modernization of old hotels and apartment houses, the laying underground of telephone and electric-power lines, and the rebuilding and modernization of wholesale produce markets in large cities are a few other investments of the "capital improvement" type which suggest themselves. The list could undoubtedly be extended by a careful examination of other industries. The point is that there are a large number of investments that might be undertaken under some assurance of sustained demand which either are not undertaken or are undertaken only very slowly under conditions of widely fluctuating demand.

The more we examine the possibilities of sustained demand as a stimulus to private investment, the more questionable the hypothesis of secular stagnation becomes. What has been a down-trend in investment over a few business cycles might easily become an up-trend if we succeeded in attaining a reasonable degree of control over the cycle.

FULL EMPLOYMENT AND THE PROPENSITY TO CONSUME

The effects of a sustained level of employment upon the individual propensity to consume or to save are more difficult to appraise. The ability to save is obviously increased by regular employment which replaces sporadic employment. The motive to save "for a rainy day" may be weakened by the experience of fairly continuous employment and few "rainy days." On the other hand, savings for the education of children and for old age might be expected to increase. These savings would cause more difficulty in the early years of the operation of a full-employment plan than they would after a generation or two. In later years the expenditure of savings for education and for retirement should largely balance the flow of new savings for these purposes. Savings for the purpose of leaving an inheritance constitute another problem. Here again, increases in real income will increase the ability to save. Whether the desire to leave children "well provided for" in a world which promises them full employment will be as keen as it is at present is problematic. We cannot expect that the expenditure of inheritances will fully balance their accumulation, since not all heirs are prodigal sons. In the case of widows, if the income from the estate is not sufficient to live on, there will be a gradual expenditure of principal which will act as an offset to saving. Saving to leave an inheritance is more characteristic of the wealthier classes and so we should expect it to be less affected by full-employment policy than the other motives for saving. Stiffer inheritance taxes would tend to offset this motive of saving to leave an estate but, before imposing them, we should be certain that they do not inhibit investment as much or more than they do saving.

FULL EMPLOYMENT AND INDIVIDUAL INVESTMENT

Full employment should act as a stimulus to investment by individuals as well as by corporations. Reduction or elimination of the risk of the business cycle should make new investments more attractive. Another important source of investment might come from the speculators. One of the most important motives in the speculative purchase of securities is an expectation of increase in the price of the shares. If smoothing of the business cycle results in considerable leveling of stock-market prices, the most important source of capital appreciation left would be that of investment in new enterprises. Since speculators are by nature risk-takers, it is reasonable to suppose that they would turn their attention more strongly to this field as opportunities for speculative profits in older securities are diminished.

There is good reason to believe that the liquidity preference of private individuals might be considerably less under conditions of full employment than it is today. The desire to keep a certain amount of cash or an idle bank balance has undoubtedly some reference to the difficulty or loss expected in converting other assets into cash in the depression phases of the business cycle. Any decrease in liquidity preference should result in greater investment or consumption.

THE BALANCE BETWEEN PRIVATE SAVING AND INVESTMENT UNDER FULL EMPLOYMENT

In the preceding discussion we have set up a strong presumption that the propensity to invest would be considerably greater under a program of sustained full employment and a less strong presumption that the propensity to save might be somewhat weaker. This does not mean that we have explained away the problem and that private investment will equal or exceed saving, once full employment is attained, so that no further government intervention is necessary. It does suggest, however, that the burden which the government assumes may be held to a minimum if the policies are so designed as to take full advantage of every possibility of increasing private investment, and possibly by finding measures which will inhibit private saving.

If the government policies adopted are of such a nature that they either do not encourage, or even actively discourage, private investment, the burden of the government in providing full employment will be an ever increasing one; the result may be a steady encroachment of government in fields which have hitherto been considered those of private enterprise. This is not to deny that there are still some fields in which a good case can be made for expansion of government activity. It is felt, however, that such expansion should be based on its own merits in addition to whatever part it may play in a full-employment policy.

It is to be expected that under a full-employment program planned private investment may at times exceed planned private saving, particularly if the program is designed to encourage private investment. A spurt in technological advance might be the occasion for such an increase in investment. To meet such a situation government policies would have to be of such a nature that not only could they be suspended but some of them could actually be reversed if necessary.

SOME ASPECTS OF SPECIFIC POLICIES

One way of encouraging private investment would be to tax the income

from new investment at a lower rate than that imposed on older investments. The personal income received from corporations, partnerships, and individual firms might be taxed at a lower rate during the first five or ten years of the existence of these firms. The difficulty would be in excluding new firms which simply represent reorganizations or in the taking over of the assets of old firms. A somewhat greater difficulty arises in attempting to use the tax reduction incentive to reward new investment of capital by old firms, since it would be practically impossible to segregate the income resulting from the new investment. If the corporate income tax is retained, a certain percentage of the sum spent on new investment might be allowed as a tax credit in the year the expenditure is made. The definition of new investment would have to be carefully drawn so as to represent actual expenditure for new capital over and above depreciation. While the difficulties are recognized, if the objective is believed sufficiently important it might be worth the time of some of our tax experts to devise ways to meet the problems.

Government spending is effective in increasing general purchasing power. A given government expenditure might be more effective in reducing unemployment, however, if it could be directed into the fields where greatest unemployment exists. Unfortunately, most of the projects involving heavy government expenditure seem to center around construction activity. For the next few years, at least, the demand for housing appears to be so great that heavy government expenditure on construction might merely compete with private residential and business construction without necessarily relieving unemployment that might exist in other fields. Immediate combating of unemployment might be more effective if the "shelf of projects" contained different types of projects involving different skills of workers in fields where it appears that unemployment is is likely to develop.

Aside from the difficulty of devising projects, there seems to be one important objection to such a specific expenditure policy. It might be the means of preventing workers from leaving a dying occupation to enter industries which were expanding. One way of helping to avoid this would be a government policy of paying less than the "prevailing rate of wages" on such projects. Also the government might provide free retraining courses plus a subsistence allowance to train workers for those trades where employment opportunities seem more promising.

In so far as unemployment is regional in character, government expenditure can be concentrated in the areas where unemployment is greatest, provided that unemployment rather than political pressure is made the test for such expenditure. Here, too, however, there is the danger of hampering labor mobility, if unemployment in the region is due to a dead industry—for example, to worked-out coal mines. Regional labor mobility might be aided by a government program to pay all or part of workers' moving expenses from an area of unemployment to one where work was plentiful.

SOME ASPECTS OF GENERAL POLICIES

There is one difficulty associated with most types of government expenditure, other than public works, as a means of meeting unemployment. Most of such expenditures, once they achieve sufficient public favor to be adopted, may be continuously demanded, regardless of the extent of employment or unemployment. Such measures as an expanded public

health service, federal aid to education, etc., are not likely to be lightly relinquished, once they are adopted. This means that the flexible element is removed from the making of the expenditure and is confined to the way in which it is financed. Expenditures continue but are financed out of deficits when unemployment is heavy and are financed from tax receipts when employment is high.

Deficit financing by tax reduction, rather than by expanding expenditures, offers problems of its own. As has been pointed out by Alan Sweezy[1] and others, many forms of tax reduction may encourage saving as well as spending, so that the necessary budget deficit to finance full employment is larger than it would be if additional expenditure is deficit financed. The leakages from added expenditure may or may not be as great as the leakages from tax remission.

Presumably the remission of excise taxes would result in a greater proportion of consumption than would most other types of tax remission. Unfortunately, flexible excise taxes appear to promise little as a full-employment policy. Aside from difficulties in establishing and discontinuing collection machinery, changes in such taxes would have to be announced at least a short time in advance of the effective date. Announcement of a tax increase would cause a spurt in buying in advance of the tax; announcement of a decrease would delay buying until the decrease became effective. Both the short-run effects would be in the opposite direction to the long-run and desired effects.

Changes in the income-tax rates as a form of deficit financing also raise some problems. Rebates, of course, could be granted at any time, but increases would have to be announced in advance of the income period. The problem would be simpler if the income tax were on a quarterly rather than on an annual basis. This would raise some difficulty for farmers, however, most of whose annual income comes in one quarter of the year. The pay-as-you-go part of the income taxes would appear in some respects to offer the ideal form of flexible tax. One difficulty would be the burden imposed on employers in refiguring deductions from pay envelopes each time the rate was changed. A more serious problem is the equitable readjustment of other parts of the income tax to correspond with the changes in the pay-as-you-go portion.

The social security taxes would seem to offer the fewest problems as a flexible tax. Reductions in the workers' part of the tax would probably result mostly in increased consumption. Reductions in the employers' part of the tax would be a direct stimulus to greater employment. Unfortunately for the purposes of a full-employment program, the social security taxes comprise only a small portion of the budget.

Unless the flexible tax program were delegated by Congress to an administrative board, and, in fact, even then, there is danger that the program would be one-directional. Tax cuts are always popular and tax increases anathema. Even in the fervor of war we did not make full use of the taxing power to avoid inflation. How much more difficult will it be to use rising taxes as a brake on peacetime inflation? Suppose the circumstance arises that planned private investment is in excess of planned private saving. Will the public and its elected representatives agree to a tax-created surplus to reduce the debt?

[1] A. R. Sweezy, "Fiscal and Monetary Policy" (paper delivered before the American Economic Association, Annual Meeting, 1946).

Borrowing to meet expanded government expenditures or to cover a tax-reduction deficit also presents some problems. Sale of bonds to the general public would be ideal if it merely absorbed private savings. There is good reason, however, to expect that such sales would compete, in some degree, with private investment and, possibly to a lesser degree, with consumption. If the bond issues to be sold to the public are large, interest rates might have to be raised to insure their sale. This might be a stronger deterrent to private investment than the mere competition for funds if interest rates were kept low. Sale of bonds to the banks, with its creation of new money, would be more powerful medicine. To what extent government borrowing from banks will weaken the banks' desire to lend for private investment is not clear, but, due to the banks' ability to create credit, this competition may be less severe than in the case of sale of bonds to the general public.

On the other hand, what would happen if it should be decided that expansion is going too far and that at least a mildly deflationary policy is called for? If expenditures are continued at the same level and the budget is balanced by raising taxes, this might mean the substitution of transfer payments for the creation of new money. In the happy event that we were sliding smoothly into a period of full employment based largely on private investment, this might be all that would be necessary. Suppose, however, that there is a threat of more explosive inflation. If bonds have been sold to the public, the repayment of these bonds out of tax receipts again represents a transfer payment; and the deflationary effect will depend upon the decision of the recipients to hold the funds idle, to reinvest, or to expand consumption. If the bonds have been sold to the banks, repayment of the bonds out of tax receipts will be deflationary if the banks do not then expand private loans. Reserve policy may be used to help prevent this. In any event, the control authority is confronted with the delicate problem of securing a leveling off or a mild decline in prices without engendering a spiral of deflation.

ATTAINING VERSUS MAINTAINING FULL EMPLOYMENT

Most of the previous discussion suggests that our ability to maintain full employment without too great difficulty depends much on the path by which full employment is reached. If full employment is reached largely through an expansion of private investment, either spontaneous or induced by mild deficit spending, there will be much more "room" for government action to avert a possible subsequent decline. On the other hand, if the level of full employment has been reached by the practical exhaustion of most forms of government spending and tax reduction, we may be confronted with what might be called "diminishing marginal efficiency of government investment." In other words, the weapons that would otherwise be available to fight off a depression may have been used up in stimulating the advance.

The most serious obstacle both to attaining full employment and to maintaining it after it is reached is the wage and price maladjustment which may develop in the transition period. Both Sweezy and Hart have been frank in recognizing these difficulties.[2] Both agree, somewhat reluctantly, upon the need for continu-

[2] Sweezy, *op. cit.*, and Albert G. Hart, "The Problem of Full Employment: Facts, Issues and Policies" (papers delivered at the American Economic Association, 1946).

ance of wartime price controls in order to avoid some inflationary price rises. Both recognize the dangers of wage increases but neither has a concrete suggestion for meeting the problem.

The labor-unions have been among the strongest advocates of a full-employment program. It would not seem unreasonable to ask them to propose a program which will avoid sabotaging full employment by wage increases which are not based on increased productivity.[3] Failing some such control, we launch a full employment program, with hope tinged with skepticism.

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[3] This does not imply that wage increases be confined to industries which increase efficiency. The whole question of the distribution of the benefits of increased productivity is very complicated. See Fritz Machlup, "Financing American Prosperity" (Twentieth Century Fund, 1945), pp. 433 ff.

THE FLEXIBILITY OF INCOME-TAX YIELD UNDER AVERAGING[1]

RICHARD E. SLITOR

AVERAGING of income for tax purposes has been proposed from time to time as a means of (1) improving the equity of the burden distribution, (2) protecting incentives from the impact of progressive rates on the fruits of successful activity, (3) simplifying administration and compliance by waiving questions as to the timing of income and deduction items, and (4) laying the groundwork for a more effective approach to the capital-gain-and-loss problem.

In a recent article in this *Journal* William Vickrey finds new merit in at least one family of averaging devices—his own cumulative averaging scheme—and, to a lesser degree, in the Simons-Groves five-year fixed-period average.[2] Vickrey's analysis indicates that under certain conditions the yield of the individual income tax under a given schedule of rates will be more sensitive to income changes under averaging than on an annual accounting period basis. This is stated to be contrary to prevalent notions that averaging would "impair the cyclical sensitivity of the income tax and so increase the difficulty of coping with booms and depressions by fiscal means."

Actually, Vickrey's counterdemonstration largely consists of attacking a straw man, since it is generally recognized that the individual income tax possesses substantial "built-in" flexibility of yield in response to income variations which would be increased automatically by certain types of averaging devices.[3] The fiscal-policy case against income-tax averaging rests on the reduced effectiveness of rate changes, which Vickrey concedes.

As an offset to the reduced effectiveness of rate increases designed to curb inflation, Vickrey states that "the greater equity attained under averaging will permit more drastic rate increases to be made in times of boom or threatened inflation." The weakness in this position is that averaging would result in a shift of burden to fixed-income recipients, who already constitute a major obstacle to adequate tax increases in time of inflation. Thus, the implicit taxation of income increases during the war, through the imposition of higher rates than would have been feasible or acceptable in the absence of widespread income increases, was limited as much by the intolerable strain on fixed-income recipients as by production and incentive considerations.

Of course, averaging in effect makes rate reductions in low-income years retroactive to high-income years and so enhances the revenue cut for a given rate decrease. But this is not a persuasive consideration. It is easy enough to reduce taxes. Whatever difficulties are involved relate to the political process of allocating the decrease, and these would be greater under averaging, with its retroactive features, than on an annual basis. Moreover, the decrease can be distributed more effectively and certainly on an annual basis.

[1] While the author is employed as an economist in the Division of Tax Research, United States Treasury Department, the views expressed herein are his own and do not necessarily reflect those of the Treasury Department.

[2] William Vickrey, "The Effect of Averaging on the Cyclical Sensitivity of the Yield of the Income Tax," *Journal of Political Economy*, LIII, (1945), 275.

[3] E.g., the carry-back of unused personal and dependent exemptions or of unused rate brackets. A two-year carry-forward and a two-year carry-back of unused exemptions were proposed by representatives of the Congress of Industrial Organizations and of the National Lawyers Guild, in connection with the Revenue Act of 1945 (see *Hearings before the Committee on Finance, United States Senate, 79th Congress, 1st Session, on H.R. 4309*, pp. 106, 125, and 250).

Aside from the difficulty about rate changes, Vickrey's ingenious mathematical demonstration of the effect of averaging on yield flexibility under constant rates hardly supports the practical conclusion that averaging can be adopted without hesitation over its fiscal-policy implications. His criterion of greater cyclical yield sensitivity—a lower ratio of tax payments in years of reduced income to the payments in years of inflated income—is not very demanding. A constant dollar amount of tax reduction each year in the cycle (reducing numerator and denominator of the ratio by the same absolute amount) would meet this requirement.[4] Furthermore, the reservation that the demonstration applies only to symmetrical variations about the average is highly restrictive. Moreover, the assumption that the current rate schedule is not much higher than the average past schedule would have been unrealistic a number of times during the past decade.

In addition, a condition essential to Vickrey's proof, i.e., that the marginal rate increases with income, but at a diminishing rate, is not fulfilled by the existing federal individual income-tax schedule or (except in minor degree) by the rate schedule in any year since the Sixteenth Amendment. To illustrate, under 1946 law the combined rate (before the 5 per cent reduction) steps up 2 percentage points from the first to the second $2,000 bracket, 4 percentage points with each succeeding $2,000 bracket up to $12,000, 5 percentage points to the $12,000–$14,000 bracket, followed by an assortment of 3 and 4 percentage point increases until high income levels are reached.[5] Thus, contrary to Vickrey's assumption, the marginal rate in the range where the vast bulk of the income and income variation occurs increases at an increasing rate.[6] If Vickrey's assumption as to the behavior of the marginal rate is replaced by the facts under the 1946 rate schedule, his conclusion does not follow and, as a practical matter, is reversed.[7]

Reduced to simplest terms, the Vickrey effect depends on tax rebates in both high- and low-income years, the low-year rebates being proportionately greater on his assumptions. Whether or not this formal result is obtained, there is a possibility that the revenue inroads of averaging might be so severe that they could not be recouped by rate and exemption adjustments. Such weakening of the individual income tax might force a resort to fiscal instruments which would be less desirable from the fiscal-policy, as well as other, points of view. Moreover, the character of the burden adjustments within the income tax might well be such as to reduce the ordinary automatic flexibility of yield under income variations, which is greater the steeper the marginal rate schedule.

Finally, it is desirable to dispel the possible impression that (leaving fiscal policy aside) averaging is by presumption a prized objective under a rational income-tax system. In this connection, the following remarks with respect to the general significance of averaging are intended to sketch

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[4] An equal percentage reduction of numerator and denominator would leave the ratio unchanged.

[5] The width of the bracket increases to $4,000 at $22,000–$26,000; $6,000 at $26,000–$50,000; $10,000 at $50,000–$100,000; and $50,000 at $50,000–$200,000, above which the top rate applies. Because of the 85.5 per cent effective rate limitation, the marginal rate decreases from 86.45 to 85.5 per cent where the limitation takes effect. The broadening of the brackets represents a reduction in the rate of increase of the marginal rate as compared with the same nominal step-up with a narrower bracket. However, the proportion of income at these levels is small. Moreover, so far as income variations within a constant-bracket range are concerned, the rate of increase of the marginal rate is generally constant.

[6] No reference is made in Vickrey's discussion to unused exemptions. The fiscal effects of their carryover are not covered by his demonstration and raise a number of considerations which would exceed the scope of this note.

[7] Vickrey relies on the rate-spread between high- and average-income levels (which governs the averaging rebate in high-income years) being less than the rate-spread between low- and average-income levels (which governs the rebate in low-income years).

briefly a number of points which the writer hopes to develop more fully in a later article.

1. While the income period for tax purposes needs further study from the equity standpoint, there is no reason to suppose that it is indefinitely better for being longer. Ability to pay should be measured by the income concept on which individuals generally base their behavior. While this concept varies among individuals and may include either more or less than one year's income flow, it rarely, if ever, embraces a lifetime income history. The fact that equality of treatment within the framework of a given accounting period inevitably results in unequal taxes on the same income as measured by some other period is essentially irrelevant.

2. From the incentive standpoint, averaging has serious drawbacks. It distorts the rate schedule by superimposing on the nominal rates the averaging rebates lost or gained as a result of receiving or not receiving income. As far as incentives are concerned, there are advantages in wiping the tax slate clean each year.[8]

3. The hope that averaging will automatically solve the capital-gain-and-loss problem is delusory. The most powerful and stubborn support for special treatment of capital gains rests on the claim, not that it is bunched income, but that it is a peculiar kind of income or not income at all. Many of the advantages claimed for averaging in its application to capital gains and losses actually derive from constructive realization of gains (and losses) at gift or death, which is not necessarily associated with averaging in the ordinary sense. Vickrey's proposed (*a*) treatment of all tax payments as an interest-bearing advance to the government and (*b*) interest adjustment of tax burdens penalizing individuals who receive their income late in life, as though they had postponed realization of a capital gain, appear to be a heavy price to pay for more effective taxation of capital gains.

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[8] These remarks are not intended to apply to loss carry-overs as distinct from averaging of positive incomes. However, the significance and incentive effects of full loss-offsets under graduated rates have not been adequately explored. For a discussion of offset of losses under a proportional tax, see Evsey D. Domar and Richard A. Musgrave, "Proportional Income Taxation and Risk-taking," *Quarterly Journal of Economics*, LVIII, No. 3 (May, 1944), 388–422.

BOOK REVIEWS

The Road to Serfdom. By FRIEDRICH A. HAYEK. Chicago: University of Chicago Press, 1944. Pp. xi+250. $2.75.

This is a political book, so Hayek—setting an excellent example—frankly tells us in his Preface. It is, moreover, a courageous book: sincerity that scorns camouflage and never minces matters is its outstanding feature from beginning to end. Finally, it is also a polite book that hardly ever attributes to opponents anything beyond intellectual error. In fact, the author is polite to a fault; for not all relevant points can be made without more plain speaking about group interests than he is willing to resort to. In this respect—perhaps also in others—he might have learned a useful lesson from Karl Marx.

The *theme probandum* of the fifteen chapters of the book—the "Conclusion" (xvi) does not do justice to what precedes—is easy to state. For the last quarter of a century or so, we have abandoned the road of promise, the road that, through freedom and individual endeavor, leads to cultural and economic achievement—in fact the road of Western civilization: "Not merely nineteenth- and eighteenth-century liberalism, but the basic individualism inherited by us from Erasmus and Montaigne, from Cicero and Tacitus, Pericles and Thucydides, is progressively relinquished" (chap. i, p. 13). Instead, we have been taking another road, lured on by the "Great Utopia"—free and democratic socialism (chap. ii)—a road that, through economic planning or control, leads to serfdom and totalitarianism, no matter what particular form this planning takes (chaps. iii, v, vi, vii, ix). We have done so without compelling necessity (chap. iv), but we have talked ourselves into a mood in which we are traveling at increasing speed into a state of affairs in which "authority" will shape and guide our lives (chap. viii), in which the worst will get to the top (chap. x), and in which free search for truth will be suppressed (chap. xi). An effective, though perhaps not quite convincing, case is made concerning the "Socialist Roots of Naziism" (chap. xii). Conservatives and Socialists who do not condemn everything that wears the National Socialist label come in for stricture (chap. xiii). And chapters xiv ("Material Conditions and Ideal Ends") and xv ("The Prospects of International Order") deal with subjects on which the reader will be glad to have the views of one of the most eminent economists of our time.

The book is being widely read and fully merits its success. Subject to correction, the author—Hayek the politician, not Hayek the economist—may be described as a Gladstonian liberal who has moved with the times without renouncing his creed. Once we realize what this means in terms of preferences and fundamental principles, we cannot but admire the force with which he formulates the attitude to the policies and ideologies of our time that follows from that particular standpoint. Moreover, many of his arguments are perfectly true, some of them obviously and strikingly so. Nothing, for instance, can be more striking than the parallelism between some of the policies of the Weimar Republic in the twenties and some of the policies of the United States in the thirties: the implications of this are seen by many who lack Hayek's courage to speak out. Nothing could be more effective than Hayek's exposure of Socialist prevarications concerning personal liberty and especially freedom of criticism under their prospective rule. Nothing could be more felicitous, speaking from Hayek's standpoint, than his simple and straightforward argument to the effect that in a fully "planned" society, though it may continue to be democratic in a purely formal sense, all those guaranties will be lacking by which there is any relation at all between democracy and liberty: to those escapists who have drifted away from the substance of liberalism yet cling to its cherished slogans, these and other things in the book may impart salutary shocks. Nothing, finally, could be more timely than Hayek's vigorous attack upon uncritical enthusiasms for "stabilization."

Some readers may be disappointed to find that Hayek fails to present an alternative policy of his own. As it stands, such criticism would be unjustified. It is the right and duty of oppositions to criticize, it is not their business to frame policies. This is a political book, written by a man in opposition. Ergo..... More serious is it, however, that no politically effective program *could* be presented from that standpoint in the

event that its sponsor moved into power. It is, no doubt, economically possible, in the United States at least, to remove from the life of the workman everything that is felt to be a grievance by any considerable body of public opinion *without impairing the efficiency of the capitalist engine and without destroying the bases of our civilization*. But no such program could appeal to electorates as at present constituted and organized: it could not run in terms of easily understandable catchwords, such as "government spending" and "control"; part of its promise could only mature in time, and the time-horizon of electorates is narrow; it would have to contain, especially in matters of taxation, many highly unpopular proposals and to admit a no less unpopular amount of individual insecurity; above all, if it undertook to scale off all the rough edges from the workman's lot, it would have to replace the capitalist penalties on subnormal performance by other sanctions, which Socialists (and they deserve praise for this, not blame) are ready enough to contemplate for the Socialist régime, but which nobody —certainly not Hayek—is prepared to accept within the capitalist order. The last point is not met but only evaded by Hayek's distinction between "limited security" (meaning "security against severe physical privation"), which he is willing to grant to all, and "absolute security" (meaning "security of a given standard of life"), the general striving for which he feels to be "the gravest danger to freedom" (pp. 119 ff.). In fact, the book, for a political book, takes surprisingly little account of the political structure of our time. As soon as we do take account of it, we shall feel more kindly toward those English conservatives who incur Hayek's displeasure because of their Socialist proclivities (p. 182). Perhaps they are the only group in the world that, as a group, combines frank recognition of the data of the situation with an adequate appreciation of our responsibility toward mankind's cultural inheritance—in the best Beaconsfield tradition.

But the author deals with ideas and principles as if they floated in the air. If he had gone into the historical conditions from which the ideas arose which he dislikes so much, he could not have helped discovering that they are the products of the social system which he does like. The principles of individual initiative and self-reliance are the principles of a very limited class. They mean nothing to the mass of people who—no matter for what reason—are not up to the standard they imply. It is this majority that the economic achievement and the liberal policy of the capitalist age have invested with dominant power. Excepting intellectuals and politicians, nobody has changed his ideas. It is the people whose ideas count politically that have changed. This is why the old road has been abandoned. And in this situation there is no point in appealing to Cicero or Pericles, whose individualism blossomed in societies whose very basis was slavery, or to Benjamin Franklin (p. 133), who spoke for a small body of hardy pioneers every one of whom cheerfully faced the alternative of getting on or perishing and some of whom did not scorn a profitable deal in slaves.

Hayek is hard, and perhaps with justice, on those "academic socialists" who hope to "combine the abolition of private property with the full retention of individual freedom" (p. 40, n. 2). But he has much more in common with them than he seems to realize; for both he and they proceed from the political sociology—the theory of political behavior and motivation—of J. S. Mill. Whoever thinks that this political sociology is fundamentally wrong will fail to be convinced by Hayek's argument, even if he agrees with all or most of his economics and even if he shares his cultural preferences. By the same token, of course, whoever accepts this political sociology will have to agree with him, at least to some extent, even if he dissents from some of his economics and does not share all his cultural preferences—which is a point worth pondering.

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Postwar Monetary Plans: And Other Essays. By JOHN H. WILLIAMS. New York: Alfred A. Knopf, Inc., 1944. Pp. xxxii+297+viii. $2.50.

This volume comprises a series of papers, all except one on international and domestic monetary problems. The exception is an essay on the theory of international trade. The papers were originally published in various periodicals during the years 1929–44. The appendixes of the book reproduce the original Keynes and White plans, the revised White plan, and the "Joint Statement on the Establishment of an International Monetary Fund."

The first three essays deal with the Keynes and White plans; they are supplemented by a

fourth paper, added while the book was in press, containing a discussion of the "Joint Statement by Experts on the Establishment of an International Fund," made public in April, 1944. These four papers, together with Williams' article on the Bretton Woods Agreement, published in *Foreign Affairs* in October, 1944, commenting as they do on the various phases in the development of these international postwar monetary plans, are indispensable reading for anyone who wishes to form a judgment on their merits. Williams has been critical of these plans from the beginning, and although his counter-proposal (the "key currency approach") has not been adopted, he can have the satisfaction of seeing that part of his criticism has been met in the Bretton Woods Agreement. He has always insisted that a clear distinction should be drawn between the transition period after the war and the more "normal" period following the transition period, and that an institution like the International Monetary Fund should be devised for the more normal postwar period, whereas the transition period with its problems of rehabilitation, relief, etc., should be dealt with by special measures. He holds further that exchange control should be retained until the emergency problems of the immediate postwar period are solved. Both of these ideas have found their place in the Bretton Woods Agreement. It is still possible that the "key currency approach," according to which the countries whose currencies are most essential for world trade should agree on the exchange rates between those currencies and set out the conditions under which other countries might come into a more comprehensive scheme, may find expression in the actual practice of the Fund; for the latter may well discover that its main problem is to regulate the exchange rates between the key countries, and that the satisfactory working of the Fund is more or less assured as soon as this problem is solved. Williams' contention that no stabilization plan is feasible until there has been a meeting of minds between Britain and the United States is still pertinent, inasmuch as the smooth functioning of the Fund will depend on this. It also remains true that "the problem of international monetary stability is primarily that of maintaining a state of proper economic health in the leading countries, and that this is the only workable answer to the whole conflict between internal and external monetary stability" (p. 19). A severe depression might soon lead to requests from some countries for permission to depreciate their currencies, and the Fund might have to agree to more exchange depreciations than would be compatible with the intentions of the scheme, which is to make exchange depreciations the exception and exchange stability the rule.

Williams is of the opinion that the creation of the International Stabilization Fund should be postponed until after the transition period, because otherwise there is a danger that it may serve as a shock-absorber for the mistakes which are made during the transition period in handling the problems of reconstruction, relief, and rehabilitation. The Fund may then have to start its "normal" work in a lopsided condition, some currencies having largely disappeared from the Fund during the transition period. Against this it can be said that a shock-absorber is needed for the transition period and, furthermore, that if ratification is postponed the plan may never be adopted. Williams' fears were based on the commonly shared belief that there would be a general dollar shortage after the war. As time goes on it becomes less certain that this will actually be the case. France and some other countries of Europe and South America are likely to have emerged from the war with huge foreign assets. It thus becomes less probable than it seemed earlier that the Fund might lose its dollar assets within a short period after it was set up.

The "key currency approach" is not an idea which Williams has developed only recently in connection with the Keynes and White plans. This is shown by some of his earlier papers, which deal with the crisis of the gold standard and the problems with which it confronted monetary authorities. As early as 1934 he wrote: "If the United States and England can preserve monetary stability at home, coupled perhaps with some safeguards against excesses of international capital movements . . . . , fixed exchange and gold flow would provide a means of imparting to the rest of the world stabilizing influences developed, maintained, and controlled through money management in the center countries. Under such conditions, the foreign exchange problem would boil down in the main to the question of the dollar-sterling rate relationship" (p. 196). These earlier articles on international monetary problems, written by an acute observer who sees contemporary events in perspective, are valuable not only because of the analysis they contain but also because they

show how earlier experience has formed Williams' ideas. Although he does not now subscribe to everything he said earlier, the consistency of the development of his thoughts is unmistakable. Changes in his views can always be traced to lessons he draws from observing the contemporary scene.

There are three essays on domestic monetary problems, one of them discussing Title II of the Banking Act of 1935 and the two others deficit financing. The first of these latter two contains a critical discussion of the theoretical foundations of deficit financing. It shows clearly how the emphasis shifted from pump-priming to compensatory budgetary policies and then in turn to deficit financing as a permanent institution for combating secular stagnation. It displays a healthy skepticism about the possibility of using deficit financing as a panacea for all economic evils. "We are behaving toward deficit spending as we did toward monetary policy in the twenties, expecting too much from it and defending partial failure by asking for larger applications of the treatment" (p. 85). The second of the papers on deficit financing discusses its implications for monetary policy and the banking system; the present writer was particularly struck by the excellent critique of "easy-money" policies.

The essay on the theory of international trade is a vigorous attack on the assumptions underlying the classical theory.

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America's Role in the World Economy. By Alvin H. Hansen. New York: W. W. Norton & Co., Inc., 1945. Pp. 197. $2.50.

Hansen's new book, addressed to general readers rather than to the specialist (p. 8). endeavors to explain, in simple terms, America's position in the international economy and the policies appropriate thereto. This is no easy task, however; and, despite Hansen's acknowledged skill, the reviewer feels he has been only moderately successful.

As one might expect, Hansen hinges his discussion of postwar international economic problems and policies upon his already firm beliefs concerning the means to full employment. The really important thing, he argues, is for the nations to co-operate intelligently in maintaining full employment in the industrial economies (above all, the United States) and to push investment programs vigorously for the economic and social development of agricultural and raw-material countries and low-income areas generally. A flock of international organizations will, of course, be needed for such a program at the operational level. But with all these embracing the same doctrine—full employment and economic development—there will be a common focus and determination galvanizing the new (and old) international bodies to effective action. And readers "with a good educational background," for whom the book is intended, will infer that, with full employment and rising incomes, nearly all international economic problems—trade restrictions, exchange rates and control, balance-of-payments problems, commodity agreements, and cartels—give way with surprising ease. America's "role" is, of course, clearly defined: she must maintain full employment at home, lend abroad, and participate actively in the international organizations to achieve higher income levels the world over.

Unless the reviewer is mistaken, this is the theme dominating the three parts into which the book is divided. Part I, "Postwar Hopes and Fears," is a quick review of the interwar period, emphasizing the tragedy of not collaborating for economic expansion. Part II, "The Economic Foundations of World Security," covering more than half the book, describes the purpose and operations of the international organizations already in existence or proposed for establishment after the war. Five of the eleven chapters in Part II deal with the Bretton Woods proposals, and two of these are "replies to criticisms." The remaining chapters in Part II deal with U.N.R.R.A., an international trade authority, international stock-piling, the I.L.O., the food and agriculture conference, etc. They seem to the reviewer to be too cursory to be of much value even to a general reader. Part III, "Exports, Imports, and Domestic Employment," emphasizes the pertinence for the United States of exports, imports, foreign lending, blocked sterling, cartels, and international collaboration. The reviewer feels that Part III and the appendixes (on "Exchange Control and Primary-producing Countries" and on "Fundamental Disequilibrium") are the best parts of the book.

It is difficult to cover so many topics in so few pages in a readable manner and not over-

simplify to the point of misrepresentation or drift into generalities so general as to be unexceptionable by the mental insertion of the appropriate qualifications and (personalized) interpretations. It seems to the reviewer that Hansen unfortunately has not surmounted these difficulties with his accustomed skill. For example, one wonders whether, even as an expository device, it is proper to play up the similarity of the International Bank with the F.H.A., without also pointing out some crucial differences, e.g., the transfer problem, fewer and larger loans, inability to realize through foreclosure and possession, etc. Is it wise, moreover, to gloss over the repayment problem in American foreign lending with "but it would not be sensible to refrain from a sound program of international lending *merely* because we are not sure how well we shall manage our own affairs" (p. 161 [my italics]). Repayment is surely half the problem in genuine lending that is not intended as a gift. And can one employ a monetary-income stimulus argument for foreign investment as an offset to saving and then say: "If we have engaged for many decades past in international lending and if in consequence we are receiving imports from other countries as payment for the interest and amortization charges, these imports will in a full-employment economy be welcomed" (p. 163). Are imports not an income depressant if exports financed through foreign investment are an income stimulus? Surely one cannot have it both ways. And other similar examples might be cited if space permitted further elaboration.

Yet the job Hansen set himself eminently needs doing and, in the reviewer's opinion, along lines consistent with contemporary economic theory such as Hansen has endeavored to follow in this volume. But, since Hansen is a person who "gets read," one wishes that he had done it better, because, for those who already agree with the general point of view which Hansen is espousing, there is little added and a lot omitted. And as for the dissidents, they are not likely to be swung over by what they read here. What the effect will be upon those many persons having no strong initial opinions on the topics which the book considers but who, perforce, will have to participate in deciding the issues is beyond the capacity of the reviewer to judge.

NORMAN S. BUCHANAN

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National Product in Wartime. By SIMON KUZNETS. New York: National Bureau of Economic Research, Inc., 1945. Pp. x+156. $2.00.

This volume is the latest of a series of national-income studies completed by Simon Kuznets in the last decade. Like its predecessors, it contributes abundantly to the theory of national-income measurement and to our store of income data.

Space permits only a partial listing of Kuznets' findings. (1) In World War II, 1939–43, national product in constant prices increased at three times the rate of World War I, 1914–18. (2) In fact, during the period of United States participation in World War I, 1917–18, national product remained practically unchanged. Thus, the large absolute expansion in war output was achieved completely through contracting nonwar production. In contrast, in World War II national product increased at about the same rate through neutrality and belligerency, so that war output could increase enormously without an equivalent decrease in nonwar production. (3) In World War I war output at its peak absorbed 29 per cent of national product. In 1943 (the last year for which the author provides data) war production comprised 44 per cent of national product. (4) During both wars the share of national product contributed by agriculture declined while that of manufacturing and transportation rose. The relative rise of manufacturing and the relative decline of agriculture were both greater in World War II. (5) Lack of sufficient data precludes definite conclusions, but what evidence there is suggests that a more even income distribution attended United States participation in both wars.

National-income statisticians will probably find Kuznets' methodology even more interesting than his empirical findings, since in deriving his estimates he employs many ingenious procedures to surmount the inadequacies of available data. The most important methodological question concerns Kuznets' criticisms of the concepts used by the Department of Commerce in compiling official World War II national-product statistics. Simply stated, Kuznets disputes the basis upon which the Department of Commerce values war output. The Department of Commerce values war output upon the same basis as it values nonwar output and implicitly assumes that the level of efficiency in munitions industries equaled that in nonwar industries. Kuznets, on the other hand, contends that the

level of efficiency was substantially lower in munitions industries than in nonwar industries; that the higher rate at which resources were compensated in munitions industries was not matched by a correspondingly greater output per worker.

If Kuznets is correct, at least two important practical consequences follow: (1) Department of Commerce estimates inflate war output and, because war output has been so great in the last several years, they considerably overstate the rise in *real* national product in this period. (2) The expansion of war output in 1941–43 depended considerably more upon contracting nonwar output and less upon increasing national product than Department of Commerce data indicate.

Kuznets advances a rather novel alternative for valuing war production which he thinks is free of the imperfections in the methodology of the Department of Commerce. Essentially, this is his procedure: The quantity of resources employed in war industries 1939–43 is estimated by deflating factor costs in war industries with an index of resource prices based on 1939. War production ("final product") is then obtained by adjusting this quantity of war resources for the growth of productivity in war industries, 1939–43, and for the difference in the level of efficiency in munitions and nonwar industries.

Competent authorities have already analyzed Kuznets' methodology in detail (see *Review of Economic Statistics*, August, 1944). Little would be gained from abridging their comments here. Instead I will try to appraise briefly the more general significance of Kuznets' researches in the measurement of wartime national income.

Department of Commerce wartime national income and product data, as they stand, are not directly comparable with its pre-war data nor are they likely to be comparable with postwar statistics. This is recognized by Department of Commerce statisticians. However, Kuznets' alternative concepts are also imperfect in a number of respects. The practical choice between the two turns primarily on a question of fact: How does the level of productivity compare in munitions and nonwar industries? Lack of data at the present time makes even tentative answers to this question hazardous. However, until fuller information is available, it will be difficult, if not impossible, to determine how seriously inadequate are existing statistics.

But whatever the eventual outcome of this controversy, Kuznets has undoubtedly written the most provocative book we have on the measurement of national product and income in wartime.

MARTIN V. JONES

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The Mining Industries, 1899–1939: A Study of Output, Employment and Productivity. By HAROLD BARGER and SAM H. SCHURR. New York: National Bureau of Economic Research, Inc., 1944. Pp. xxii+452. $3.00.

This substantial volume adds once more to the large accumulation of statistical studies sponsored and directed by the National Bureau of Economic Research. More narrowly it may be identified as the fourth in the series devoted to measuring production and employment in the United States since 1899. (Of the first three, two volumes by Fabricant treat output and employment in manufacturing, and one, by Barger and Landsberg, covers similar ground for agriculture.) It is the function of the present work to present statistical data on output and employment for American mining.

Striking aspects of this study are the rigid limitation of its scope to straightforward statistical description and its complete avoidance of any general interpretative effort. Because these limitations were presumably set in planning the broad project of which this study composes only one of several segments, no criticism may fairly be directed against the immediate authors. With respect to the program of which this study forms a small part, however, it is perhaps pertinent to inquire whether a parts-prefabrication and assembly-line technique of developing the aggregate of economic truth leads to the optimal employment of research effort. A growing mass of data becomes available, but the practical and cultural justification for concocting it must be provided by someone who finds a way to use it.

The present volume is divided into three parts. The first contains a statistical survey of output, employment, and the ratio of output to employment in the mining industries (including petroleum) generally. The second comprises a short descriptive summary of technological changes in various mining industries from 1899 to the present, and the third treats changes in labor productivity in six principal mining industries. There are about one hundred and forty pages of appendixes concerning data and method.

As far as can be observed, the authors have done a complete, careful, and competent job. The basic materials employed and the statistical methods used in processing them call for no particular comment. One theoretical question of possible interest to the statistician, however, may be mentioned. One project of the authors is to compute an index number of mining output by years from 1899 to 1939. To do this they make a complete succession of biennial comparisons (by the Edgeworth formula), measuring the ratio of each year's output to that of the year preceding, and convert these into a forty-year chain index. Because the comparisons of later with earlier years may be distorted or biased by the chaining process, a chain index with decade-long links (1899–1909–1919–1929–1937) is computed and is established as superior (or less biased). The corresponding years in the annual chain are rectified accordingly, and the intervening years in any decade are corrected by distributing the decade discrepancy "in an even fashion" over the decade. The precise theoretical merit of this expedient is not clear to the present writer, but it is submitted for discussion.

JOE S. BAIN

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The Social Framework of the American Economy: An Introduction to Economics. By J. R. HICKS and ALBERT GAILORD HART. New York: Oxford University Press, 1945. Pp. xvi+261. $2.50.

The subtitle of this book is perhaps a better indication of its content than the main title. The present work is an American "translation" by Hart of Hick's earlier book, *The Social Framework: An Introduction to Economics*, first published in England in 1942. The "translation" involves not only Americanization of language, spelling, and idiom but also a substitution of American statistical data for their British counterparts in the original edition.

This little book will fill a gap which has long been a defect in the average elementary course. It avoids the harshness of plunging the student directly into value theory. At the same time, it avoids the hopeless immaturity of the usual "descriptive" text. While theory has been held to an irreducible minimum, there has been no hesitation in introducing and explaining clearly such theoretical concepts as are necessary to an understanding of the economic system to which the student is receiving his introduction.

The theme of the work is an explanation of national income and its distribution. This is approached through a consideration of the productive process, including consumption and investment, a discussion of the factors of production and, finally, of the social output and social income. The introduction as given is equally suitable for a Keynesian or non-Keynesian subsequent treatment.

The only serious omission, in the opinion of the reviewer, is the failure to make more use of the concept of the gross national product. In view of its present currency, it would seem that a clear statement of the relationship between national income and gross national product would strengthen the income discussion.

Repeatedly the reader is led up to questions of value theory and then told that these are beyond the scope of this book. While this may be somewhat annoying, it should whet the appetite of the student for their consideration in the value theory part of the course. The use of this introductory text should give the student a better background against which the traditional value theory may be presented with more perspective and, it is hoped, a better understanding.

ALBERT L. MEYERS

Chevy Chase, Maryland

Bank Liquidity and the War, Part I: *Nature and Significance of Bank Liquidity;* Part II: *Banking Changes and the Liquidity Problem;* Part III: *Bank Liquidity in War, 1939–45.* By CHARLES R. WHITTLESEY. New York: National Bureau of Economic Research, 1945. Pp. 86. $0.50.

Professor Whittlesey has written an excellent monograph on the impact of the war on the position of the banks. While the aggregate liabilities of the banking system have grown enormously, the extent of the increase has been strikingly uneven for the various sections of the country. The ratio of increase of the deposits of member banks from June, 1940, to June, 1944, ranged all the way from 62 per cent in the Boston district to 152 per cent in the Atlanta district. It is pointed out that if the pre-war distribution of deposits is re-established, banks in

the districts having the greatest increase will be confronted with the problem of meeting a serious drain of deposits to other districts. The need for liquidity has been increased also by the decrease in the ratio of time to demand deposits, and by the rapid growth in large deposits; but an offsetting factor has been the decreased proportion of interbank deposits.

Fortunately, from the standpoint of the ability of the banks to meet increased demands for cash, wartime changes in the character of assets have been in the direction of greater liquidity. While excess reserves have declined, holdings of Treasury bills have risen sufficiently to maintain substantial constancy in the ratio of cash plus funds due from banks plus Treasury bills to deposits; and the policy of the Reserve system announced in April, 1942, of maintaining a buying rate of ⅜ per cent on bills has had the effect of making bills substantially the equivalent of cash. Furthermore, the policy of maintaining an established pattern of rates on government obligations means that, in practice, Treasury obligations of all maturities are completely liquid. Since the volume of governments held by the banks now amounts to some 75 per cent of their deposits, it is manifest that any bank which holds the average amount of Treasury obligations can meet any conceivable demand for cash without difficulty.

A considerable amount of attention is given to the Treasury bill policy of the Reserve system. It is pointed out that this policy provides a ready and spontaneous adjustment of the volume of their reserves to the "needs" of the member banks. Whittlesey might well have added that it has been an excellent device for facilitating an inflationary means of financing the war, and that a continuing attempt to maintain the pattern of rates on government obligations is likely to be markedly conducive to future inflation.

Whittlesey has apparently conceived of his task as that of analyzing the effects of war financing on the banks without attempting to appraise the financial measures that were used (p. 79 n.). So conceived, his task has been performed admirably. Particularly to be commended is the absence of any reliance upon what I call the real-bills doctrine, that is, the view that liquidity can be maintained only by restricting the earning assets of the banks to loans growing out of bona fide commercial transactions.

LLOYD W. MINTS

University of Chicago

Economic Problems of Latin America. Edited by SEYMOUR E. HARRIS. New York: McGraw-Hill Book Co., Inc., 1944. Pp. xiv+465. $4.00.

It is commonplace to remark that multi-author books are of mixed quality. The volume under review is no exception to the rule. A group of seventeen writers, most of whom are in government service, have contributed eighteen chapters, eight on over-all Latin-American problems and ten on individual countries. The section dealing with Latin America as a whole consists of an introductory chapter and individual chapters on general problems, such as agriculture, central banking and monetary management, fiscal policy, price stabilization, the exchanges, and the history of trade policy. The country chapters, varying in length from twelve to thirty-four pages, relate to Argentina, Bolivia, Brazil, Chile, Colombia, Cuba, Haiti, Mexico, Paraguay, and Venezuela. Central America is conspicuously absent.

Five chapters may be regarded as outstanding, in the sense that they deal in a clear-cut and penetrating way with over-all Latin-American problems or with special national situations. Robert Triffin's chapter, "Central Banking and Monetary Management," is an excellent summary of the subject. This author shows a keen grasp of the peculiarities of central banking among our neighbors to the south, in part because of his firsthand knowledge of the subject. Throughout, the author makes judicious use of analytical tools. The chapter on "Fiscal Policy and the Budget," by Henry Wallich, is another outstanding contribution. Particularly interesting is the treatment of the multiplier effects of fluctuations in foreign trade and the impact of such effects upon the fiscal policy of different countries. Among the chapters on individual countries, three deserve special mention. These are the chapters on Cuba (Henry Wallich), Mexico (Norman Ness), and Venezuela (E. G. Bennion). Each is characterized by considerable penetrating analysis of some basic problems (as opposed to transitory wartime difficulties). Except for a few discussions of price-control measures, the book's other chapters add little to the already extensive literature on Latin-American economics and politics.

The book is disappointing in important respects. In the first place, a disproportionate amount of space is devoted to price control, which is only a transitory problem. This em-

phasis, no doubt, reflects the special interests of the editor. Full-length chapters on industrialization, transportation, and the economic aspects of population should have been included—if necessary, at the expense of space devoted to other topics. To be sure, the chapter on Argentina devotes some attention to industrialization in that country; but it is sketchy and fails to evaluate such basic matters as tariff and exchange-control policy in relation to industrial development. Second, the editor's introductory chapter is much heavier (and at times more confusing) reading than one should encounter in the section that is supposed to introduce the book. The chapter is shot through with inaccuracies and confused and controversial analytical matters. Thus it would appear that wool is Argentina's second-ranking export (p. 8) and that coal is a leading Latin-American mineral export (p. 28), although in both cases the implications are at variance with the facts. The common mistake is also made of stating that Latin America's spendable gold and exchange resources were about three billion dollars at the end of 1943 (p. 11). This figure was approximately the measure of gross holdings—the spendable or net figure, obtained by the simple process of deducting legal monetary reserves and a reserve for balance-of-payments contingencies, works out at only about half the indicated amount. The reader is further confused by being told by the editor at one stage that North Americans are debarred from buying Argentine (fresh) beef because of a high tariff (p. 31); whereas at a later stage an official of the Department of Agriculture (Mr. Wheeler, p. 86) correctly points out that Argentine fresh meat is not imported owing to a sanitary embargo imposed because of the prevalence of hoof-and-mouth disease in that country. Moreover, it is inaccurate to say (p. 17) that the lack of a completely successful anti-inflation policy in the United States and the United Kingdom was an important factor in preventing Latin America from "stopping" its wartime monetary expansion. Such a statement is inaccurate because it overlooks changes in the volume of our exports. If physical exports from the United States and the United Kingdom had been much larger than was possible under the exigencies of war, higher f.o.b. prices per se would have had relatively little inflationary effect. Finally, the reader may well be puzzled when he is told in the editor's discussion of exchange appreciation that "cheap dollars are made increasingly scarce if they are to be used, for example, to purchase products of protected industries" (p. 17). All that this means is that a lower local-currency price of dollars may not benefit Latin-American importers if the exchange-control authorities deny dollar exchange for the purpose of importing goods which are available at home from high-cost producers.

Two points deserve mention in connection with the editor's use of controversial theoretical matters in the introductory chapter. First, he asserts that capital formation by way of price inflation (so-called "forced savings"), even though it is "fraught with danger," is a "*sine qua non* for the economic development of countries that are short of capital" (pp. 24–25). But this inflation, it is added, must not proceed too rapidly. The reviewer regrets that North American writers subscribe to this view, which is widely held among the ruling classes of Latin America. Given the very one-sided distribution of wealth and income, capital formation by way of inflation is only a device for squeezing resources out of the substandard living of unpropertied citizens. There are available to Latin America other, albeit less rapid, methods of adding to capital. In fairness to the editor, however, it should be pointed out that the inflation thesis is also defended in some of the country chapters. Second, the editor subscribes to the view that losses on United States loans to Latin America should be borne by the United States, provided that the loans conform to intergovernmental arrangements of a general sort concerning international lending, because the "main economic and political gains are *shared* by the United States" (p. 21 [italics added]). The economic gains consist of improved employment in the United States resulting from the stimulus to additional exports in periods of underemployment. Apart from the obvious fact that losses on United States loans have always been borne by our lenders or "shared" to the extent that countries in default were not able to borrow at all or not on good terms, it appears that the above view is only a subtle version of the thesis that a permanent export (and current-account) surplus is a desirable goal for the United States. Space prohibits consideration of the merits of this argument, but it seems unfortunate that so involved an economic and political question was incorporated into a purely introductory chapter of a book of this sort.

A final word is called for with respect to some of the more glaring errors in other parts of the

volume. On page 151 the editor states that Colombia's pre-war imports of rice were from Japan; actually, Japan was not even among the major suppliers. Also of interest is the editor's attempt to "explain" an apparent inconsistency in certain Peruvian statistics. The official trade statistics show a rising export surplus through 1942. This is described as puzzling in view of the fact that "import prices" have increased relatively to export prices. "The explanaton is, of course, that import prices are not the prices paid by the Peruvian importer, but rather the prices of resales of imported commodities, and these resales have been at notoriously high levels" (p. 158). It would be difficult to find a better illustration of the risks involved in the facile method of "armchair" research. The distinction between resale prices and c.i.f. prices is quite misleading. The facts of the case are that the Peruvian official statistics substantially understate wartime imports by arbitrarily valuing them at f.o.b. plus a mere 20 per cent to cover freight and insurance. That is, the official statistics, the editor notwithstanding, do not show the actual prices paid by importers. Analysts in Washington correct the Peruvian figures by allowing 40 per cent for freight and insurance. One example will show why an upward adjustment is necessary. Argentine wheat, which Peru imports at the annual rate of about 100,000 tons, has remained almost unchanged in price, f.o.b. Bahia Blanca; yet freight and insurance jumped from $7.00–$8.00 per ton in 1940 to as high as $55 per ton in 1943. Peru's wartime export surplus, like that of most Latin-American countries, has been achieved because increased export volume has more than offset the effect of a deterioration in the terms of trade. There is another slip by the editor on page 189, where copper is incorrectly substituted for coffee as a Venezuelan export product for which an exchange-rate subsidy is paid. (Bennion has a correct statement of Venezuela's exchange-rate subsidy system on p. 427.) Finally, the chapter on Paraguay contains a serious error which might easily have been avoided if an attempt had been made to inform the reader as to the dollar equivalent of the Paraguayan peso. Thus, on pages 403–4 two tables show cattle and beef prices in *centimos* per kilogram, with steers apparently having been priced in 1942 at the ridiculously low level of 0.016 cents per pound (12 centimos per kilogram). The prices in both tables actually were prices in pesos. Moreover, although the Paraguayans adopted a new currency unit, the guaraní (equals 100 old pesos), in November, 1943, a year before publication date, there is no mention of this in the present volume.

Despite the fact that the book is marred by a number of inexcusable errors as well as some confused and misleading statements, this volume is a useful addition to the literature. There are several chapters which it will pay even the Latin-American specialist to consult, and for the general reader the book as a whole will serve as a convenient reference.

VIRGIL SALERA

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Inter-American Affairs, 1944: An Annual Survey: No. 4. Edited by ARTHUR P. WHITAKER. New York: Columbia University Press, 1945. Pp.vi+284. $3.00.

This volume is similar to its predecessors in plan and execution, although the number of contributors is less and somewhat more attention is given to historical background. The essays on economic development, formerly written mainly by George Wythe, are furnished by Miron Burgin, in whose narrative a few minor errors appear. A new section, supplied by Sanford A. Mosk, of the University of California, deals rather sketchily with "Main Currents of Economic Thought." The most useful sections of the volume are those concerned with politics and diplomacy. Except for the fifth (and last), which lists the main events for the year, the appendixes are of little value. The maps are too few. The one on page 6 (at any rate, the southern portion of it) is practically worthless and the map on page 117 (Brazilian railways) fails to illustrate the discussion. Whitaker's essays, otherwise excellent, devote too much space to the Argentine situation and, by too narrow confinement to the year 1944, give an erroneous impression regarding Argentine representation at Chapultepec and San Francisco, not to mention what appears to be a rather carping attitude toward Cordell Hull and the policy of the State Department, which the editor might better have appreciated if he had given a little more thought to Russo-American relations and curbed his enthusiasm for Sumner Welles.

The main defect of this work continues to be its failure to present adequate historical background. In this reviewer's opinion, the volume for 1945 should contain brief sketches of Latin-American railway, highway, airway, irrigation,

manufacturing, and electrification history; and instead of mere scraps of information, the appendix should present comparative statistics of the value of factory production in the leading countries stated in terms of United States currency instead of the various currencies of the countries themselves. The value of the handbook would also be enhanced by somewhat more emphasis on bibliography.

J. FRED RIPPY

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Elementary Statistics and Applications: Fundamentals of the Theory of Statistics. By JAMES G. SMITH and ACHESON J. DUNCAN. New York: McGraw-Hill Book Co., Inc., 1944. Pp. x+720. $4.00.

This book and a second volume, *Sampling Statistics and Applications*, which deals with advanced theory pertaining to frequency curves and sampling, constitute a set entitled *Fundamentals of the Theory of Statistics. Elementary Statistics and Applications* is designed for a beginning course.

The book contains 680 pages of text and 40 pages of indexes and tables. It is divided into five approximately equal parts and a shorter sixth part. Part I contains chapters on sources, collection, and presentation of data; Part II deals with frequency distributions; Part III presents the theory of probability and the use of the normal curve in sampling analysis; Part IV deals with simple correlation and the "build-up" method of linear multiple correlation; Part V is a "study of dynamic variability" which deals with problems of time series, including index numbers, but excluding forecasting which is presented separately in Part VI.

This book compares favorably with other good texts in statistics and contains some features which are not usually found in general texts. Topics which are given special attention include the three important concepts of probability, derivation of the normal equations, orthogonal polynomial trends, normal bivariate surface, and linear regression functions for all choices of dependent variable.

Since the scope of the book is so broad, it is not surprising that some parts of it should need improvement. For example, a number of misleading statements in the treatment of graphical presentation are probably due to the common failure to distinguish correctly between amount of change and rate of change, between distance and slope and between rate of change and relative rate of change. Another type of shortcoming can be found in the section on measures of skewness, where too many technical devices are presented with inadequate indication of the purposes which each might serve.

While the authors have presented the mathematical parts of the subject with commendable clarity and thoroughness, they have presented with even greater effectiveness the introductory and nontechnical material of Part I. The opening chapter on the place of statistics in the arts and sciences is enlivened by notes on the development of statistical methods and bits of excusable optimism concerning their contribution in these fields. Charts, tables, schedules, instructions, and definitions are accompanied by sensible, lucid discussion of sources, collection, and presentation of data.

JOHN H. SMITH
FRANCES A. MARANS

U.S. Bureau of Statistics

The Cotton Textile Industry of Fall River, Massachusetts: A Study of Industrial Localization. By THOMAS RUSSELL SMITH. New York: King's Crown Press, 1944. Pp. x+175. $2.00.

Since this book is written by a geographer, it presents the novelty of being organized on a historical basis: of the 163 pages of text, 39 treat the period 1800–1845, 40 the interval 1845–75, 42 the years 1875–1914, and the remaining 42 the recent past. Moreover, the distinctly geographic approach dominates the presentation in no one of the four parts and is given less and less emphasis as the author moves forward in time, so that the final quarter of the book bears no trace of its writer's profession. The reader's judgment of the book is largely conditioned by these facts; the chief contributions are those made by the geographer, and the outstanding weaknesses can be attributed to Smith's adventuring outside his professional domain.

This reviewer's choice of the principal contribution made by the book is the 17-page section entitled "The Early Nineteenth Century Economy of the Lower Taunton Valley." It is here that greatest originality is displayed in the definition of an issue and that the widest departure from the conventional has occurred in the choice of source material. The author carries

conviction in his demonstration that the site of Fall River possessed, on the whole, net negative advantages so far as an undiversified, primarily agricultural economy is concerned. The soil in the immediate vicinity was poor, the harbor lacking in shelter, the topography forbidding to land transport. The attraction was, clearly, to be the easily utilized and regular flow of water power. Smith is at home in his manipulation of this subject. It is the more surprising that he should then, in interpreting "the rise of the factory town" and "the emergence of the industrial city," in a measure reject the obvious and congenial positions (*a*) that the behavior of Fall River up to 1865 was not extraordinary, compared to that of a number of other waterpower textile sites, and therefore (*b*) that no elaborate reappraisal need be made for this period of Fall River's geographic attractions. This reviewer believes the use of 1845 as a dividing line was an error, implying, as it does, that growth in the twenty years after 1845 was more remarkable than that in the preceding twenty years, always compared to the American cotton industry as a whole. Actually, Fall River's industry was about 2 per cent of New England's in 1845 and about 3 per cent in 1865; its growth in those years was much less spectacular than that of Lawrence and Lewiston in northern New England and attracted less attention than that of the industry in southern New England's Pawtuxet, lower Blackstone, and Thames system valleys.

The phenomenon of Fall River concentrates about the years 1865–75. In those years the cotton industry of the northern United States grew by about 60 per cent, the Fall River industry by 500 per cent; one-fourth of the total northern increase was contributed by Fall River, which in 1865 was less than 3 per cent of that industry. Smith's is only one of a number of attempts to explain that "bulge"; and, on the whole, he achieves no particular advance over those of Burgy, Wisselink, and Chen-Han (each of whom the author, surprisingly, ignores). The documentation is an improvement, but the emphasis is about the same and is equally open to the objections of overexplaining some things and failing to explain others. One weakness in the documentation is its failure to make any mention of the parallel rise of other steam-powered port mills in southern New England (at least seven in Rhode Island intervened between the 1828 Slater Steam and the first in Fall River), which has the consequence of leaving unexplained the selection, from among such contending sites, of Fall River to receive the great impetus. This defect is common to every mechanistic geographical explanation of the phenomenon, whether it be material transportation, humidity, or "market orientation" (the last a peculiarly Weberian term in a book which neither makes specific reference to Weber nor employs his concept of "agglomeration," devised by Weber for just such urban-site studies).

There is space for two comments on that chapter of the book which discusses the rise of the South. It is inappropriate to trace the ascent of a region in terms of the decline of a site. The chief contribution that could be effected from concentrating on Fall River is attempted, but not quite delivered, and that is a cost comparison for print-cloth production between Fall River and its southern counterpart, piedmont South Carolina. The author reports factor prices but does not offer any translation into cost for the same series of years.

The final chapter is called "Collapse and Survival"; the collapse portion could have been enlivened by greater use of the newspapers, particularly the *Daily News Record*, and the discussion of survival is without reference to behavior in other areas of the North. Throughout the book there is maintained a high level of accuracy, due in part to the author's reluctance to make generalizations.

SETH HAMMOND

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The Cotton Mill Worker. By HERBERT J. LAHNE. New York: Farrar & Rinehart, Inc., 1944. Pp. xiii+303. $3.00.

Lahne has presented an interesting and informative historical analysis of labor conditions and relations in the cotton-textile manufacturing industry. The study is concerned primarily with the history of unionism and collective bargaining; and it follows the general pattern, largely descriptive, of a rapidly expanding list of monograph studies of the problems and progress of collective bargaining in different industries and crafts. The general pattern of such studies includes material descriptive of the economics, structure, and technology of the industry as a background for the discussion of trade-union organization and collective bargaining. Typically, however, the economic and technological matter is so superficial and inadequate as to provide no significant basis for understand-

ing the economic problems of the industry or for evaluating the problems and results of collective bargaining. Lahne's analysis of structure, technology, economics, and cultural factors is, by comparison exhaustive, well-rounded, and judicious.

Despite the generally high quality of analysis and objectivity in this study, the author does not fully succeed in avoiding the faults of inconsistency and bias. Although the discussion makes clearly obvious the fact that low wages and other relatively low labor standards of the industry are basically attributable to conditions of supply relative to the demand for labor in cotton-mill labor areas, he fails entirely to make that obvious inference. Instead, he conjures up explanations based on such matters as custom and tradition, the practice of family labor units, inconsiderate attitudes of mill operators, and lack of labor legislation.

Lahne's economic analysis falls to the level of deploring the fact that hourly earnings have not kept pace with percentage increases in output per man hour. His condemnation of "unbridled competition" and "the competitive labor exploitation which has characterized the industry" would appear to rest on the assumption that an approximation of effective competition is, by definition, exploitative. Because reduction or elimination of the North-South wage differential is deemed necessary to the growth and stability of the union, Lahne approves elimination of the differential, even though his analysis clearly shows that the effect would be substantially to reduce total employment in the industry, with the burden falling on the South.

Despite such shortcomings, this is a valuable addition to the literature on trade-unionism and collective bargaining. The discerning reader will be able to judge the limited possibilities of collective bargaining or legislation to deal constructively with the economic problems of labor in this highly competitive industry under conditions of labor supply and demand which produce low-equilibrium labor standards.

R. W. STONE

University of Chicago

The Printing Trades. By JACOB LOFT. New York: Farrar & Rinehart, Inc., 1944. Pp. xiii+301. $3.00.

This volume, one of the "Labor in Twentieth Century America" series, is a comparative study of the newspaper and commercial printing industries, concerned chiefly with composing-room and pressroom labor. Thorough use has been made of the earlier studies and of union, employer, and trade publications in the field. It is unfortunate, however, that little material available since 1940 was used. The author's Foreword is dated 1942, but publication was delayed until the fall of 1944. The study falls roughly into three parts. In the first, after a brief history, chapters on migration of printing and on printing as a business point out significant differences in the business organization and competitive situation of the industries. The second part, nearly half of the text, combines a statistical analysis with a history of pertinent union policies on changes in technology, the makeup of the labor force, health and safety conditions, and hours and wages. A nonstatistical chapter included here discusses such problems as the position and powers of foremen, priority, discharge disputes, competency standards, issues over interchange of matrices, the manning of presses, and others. The remaining chapters consider employer organizations, the unions, union jurisdiction and government, union controls, employer controls, industrial relations, and arbitration.

The plan to analyze comparatively the problems of the two main branchs of the industry is a good one. The two chapters on newspapers and on book and job printing in the Twentieth Century Fund study of collective bargaining (not mentioned here)[1] only in part serve this purpose. Differences as to the importance of labor costs, the possibility of intercity competition and migration, and the importance of uninterrupted operation are shown to influence the extent of organization and enforceability of union standards and the extent of union gains in the two industries. The author concludes from his study of wages, output, costs, and profits that, in spite of more comprehensive union control and higher wages in the newspaper industry, "there is little reason to picture union wage policy at odds with industrial interests" (p. 156). A study of geographic wage differentials found the range between communities less in the case of newspaper and periodical printing than in the book and job industry, while the latter was more sensitive to these differentials, so that printing tended to

[1] *How Collective Bargaining Works* (New York, 1942), chaps. ii and iii.

flow to the low-wage centers (p. 168). The author failed to note, however, the evidence of a tendency to reduce these differentials as union strength increased in some of the growing "low-wage centers."[1] The detailed discussion of other problems brings together much material of interest, although the difficulty of handling such statistical and historical data comparatively is not always solved. The technique of presenting detailed statistics in the text, the tables appearing only in an appendix, makes for unnecessary difficulty. Occasionally, also, one regrets the absence of more recent material, especially on developments of policy.

In the discussion of organizations and labor relations, a lack of emphasis on local aspects is to be noted. In the book and job industry, preoccupation with the history of the United Typothetae of America detracts attention from the fact that local employer associations for many years have played the major part in labor relations. On the other hand, the Printers National Association, which has developed since 1935 to meet the need for nation-wide consideration of labor problems by employing printers, receives only passing mention in the concluding chapter (p. 266). There is little discussion of methods or results of the local collective bargaining in this branch of the industry. The author underestimates the extent to which it has used arbitration (or, alternatively, local joint standing committees) for peaceful settlement of disputes (pp. 230, 268; but cf. pp. 234–35). The more formal history of arbitration under national systems in the newspaper industry is discussed at length. One wishes for more comparative discussion of the results of the mixture of local and national influence in the collective bargaining of the different branches and for further analysis of the basis for the suggested need of more integration or possibly for union among the crafts (pp. 197–98, 267).

Each chapter is fully footnoted. A two-page selected bibliography, however, is less useful than would have been a full "Bibliographical Note," such as appears in the other volumes of this series. The Index is incomplete, omitting the names of certain organizations mentioned, and giving only partial page references.

EMILY CLARK BROWN

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[1] *Ibid.*, pp. 157–59.

The Economic Status of the New York Metropolitan Region in 1944. By REGIONAL PLAN ASSOCIATION, INC. New York, 1944. Pp. xx+91.

This volume presents a statistical analysis of the economic structure of the New York Metropolitan Region, of trends in business and industry by type, and of the size and nature of the postwar employment problem in the Region—an area of twenty-two counties surrounding the Port of New York. It is the first of a series of economic studies designed to provide a basis for planning the physical development of the area. The chief sources are the United States Census of Manufactures, the sixteenth (1940) United States Census, and other United States Census reports. Succeeding studies are to develop recommendations for reducing the competitive disadvantages which hamper certain of the economic activities in the New York Region and to identify the types of activity best suited to location in the Region and most amenable to expansion.

In analyzing the economic base of the area, a distinction is made between "basic" activities, which produce goods or services for people outside of the Region, and "service" activities, which serve the population within the Region. It is estimated that for every 100 persons engaged in the "basic" activities of manufacture, banking, insurance, administrative offices, wholesale trade, transportaion (not local), hotels and entertainment, there are another 215 workers in local manufacture or service lines.

Manufacturing is the largest activity in the Region, employing 1,400,000 persons. Sixty per cent of the "basic" employment is in this category. Banking, insurance, and administrative offices run a poor second, with 15 per cent. There is a greater diversification in manufacturing than in any other metropolitan area in the United States. Establishments are small, averaging 27 wage-earners. Apparel is the largest industry-type, accounting for nearly one-quarter of the total manufacturing employment. Three-quarters of all industrial workers are in nondurable-goods lines. Manufacturing employment declined by 12 per cent in New York City alone between 1930 and 1940; but in the Region outside of New York City, where 45 per cent of manufacturing employment is located, only slight changes occurred. The decline for the area as a whole was only 4.4 per cent.

The effect of the war on the New York Region is shown by an increase in the labor force of from 5,700,000 in 1940 to 6,000,000 in 1944, in spite of the entry of 1,000,000 men and women into the Armed Forces. Total "basic" employment, including 700,000 in war manufacturing, has increased from 1,500,000 to 2,100,000, while nonbasic employment has dropped from 3,245,000 to 2,800,000.

The postwar employment goal for the New York Region is set at 5,600,000 to be employed, or 855,000 more than were working in 1940. Failure to meet this goal is said to foreshadow a declining population, a fall in real estate values, and loss in tax revenue; under these circumstances, population can be maintained only by heavy relief payments, with a resulting rise in costs of government and costs of doing business in the Region. The study concludes that on the basis of the demonstrated ratio of 100 to 215 for "basic" and "service" employment, it will be necessary to find only 1,780,000 jobs in "basic" lines (280,000 more than in 1940) in order to produce automatically 3,820,000 additional jobs in "service" occupations, or a total of 5,600,000. The lines of activity which show the best potentialities for increase over 1940 employment are listed and briefly discussed.

This study is notable in a number of respects. First, it is another of the long line of contributions which have been made by its director, Homer Hoyt, to our understanding of the economics of urbanism. It is in the nature of a continuation of the excellent pioneer studies of the New York Region made by Robert Murray Haig from 1924 to 1928. Finally, Hoyt has demonstrated a straightforward application of Census materials in the analysis of the economic status of an urban area, such as might easily be employed with great benefit by local and state planning boards the country over.

RICHARD U. RATCLIFF

University of Wisconsin

War Labor Policies, Vol. I: *Yearbook of American Labor*. KATHARINE DU PRE LUMPKIN, Managing editor. New York: Philosophical Library, 1945. Pp. xvii+655. $7.50.

It is almost inevitable that a volume containing contributions from many authors will be spotty and uneven. The *Yearbook of American Labor* is no exception to the general rule. The *Yearbook* is a useful factual compilation of many of labor's wartime activities. Few policies are examined critically, nor is there any discussion of internal policies or problems of labor unions. Several of the articles are excellent; among the best are "Review of Basic American Conditions," by H. M. Douty, "Labor Legislation," by David Ziskind, and "Collective Bargaining and the National Labor Relations Act," by Emily Brown. While these articles are largely factual, they are packed full of information, and both Douty and Brown add a number of shrewd observations to their studies. Constance Williams has adequately described a number of changes introduced into collective bargaining agreements, but George W. Taylor's "Labor's No Strike Pledge—A Statistical View" is too short and unrewarding. The same criticism can be made of the article on "Wage Stabilization" and several other contributions suffer from the same deficiency. Discussion of a subject should either be adequate or be avoided.

Labor relations are examined in six industries. Like the remainder of the volume, these articles differ greatly in the information they yield. Colston Warne's article on coal is a step-by-step examination of the union-management struggle in that industry during the war, while the chapter on the maritime industry deals mainly with recruiting of personnel, and scarcely mentions the existence of the unions and their attitudes toward maritime labor problems in wartime.

The article on "Negro Workers and Organized Labor" is important, for it discusses discriminations by unions against Negro labor and argues that the attitude of Negroes to organized labor is likely to be greatly influenced by the union's ability to wipe out this practice. Mildred Fairchild's "International Relations of American Labor Unions," while giving the position of the American Federation of Labor in regard to co-operation with the Soviet trade-unions, makes no attempt to examine the validity of this view.

PHILIP TAFT

Brown University

The Growth of the American Economy: An Introduction to the Economic History of the United States. Edited by HAROLD F. WILLIAMSON.

New York: Prentice-Hall, Inc., 1944. Pp. xiii+804. $5.35.

Economic history is a study that must justify itself to the average young American. Modern youth is not particularly interested in what has happened in past decades and centuries: attention is concentrated upon the pressing problems that weigh upon this generation. The undergraduate must be convinced that the investigation of the past may furnish aid in handling present-day situations. While a student will not at first realize that economic theory is the quintessence of experience, it is not difficult for him to see that only in the past can we trace the results of the application of economic policies. The problem of the teacher is to make the past live as a great store of human experience that cannot be ignored.

The effective presentation of economic history to large classes is immeasurably aided by well-written texts. The field is so vast that adequate treatment seems to demand a lifetime of study and research by a successful teacher or the co-operative effort of a group of specialists working under effective guidance. While the monograph has the advantage of continuity of treatment, the co-operative work receives benefits derived from the division of labor. Excellent books have been produced by each method and by a combination of individual and group workmanship.

The Growth of American Economy represents the work of twenty-six economists and historians, edited by Harold F. Williamson. The authors write in the prime of life on topics in their field of specialization. The reader will be impressed by evidence of careful scholarship and effective presentation. The student will be conscious that the approach is essentially that of the practical man of affairs meeting actual problems. "The economic history of America has its beginning as an investment of European capital and labor" (p. 10) is a statement that arrests attention. "In the old days, it was the customs ledger, rather than the map, that determined the desirability of a colony" (p. 67) presents a challenge to the interested student. "Many of our serious social problems have been and are associated with shifts of location" (p. 579) emphasizes the ever changing pattern of economic activity and institutions. The characterization of the record of the New Deal as "used by one side to indicate the necessity of continued Government intervention and by the other to demonstrate the dire consequences of interfering with the natural behavior . . . . of free enterprise" (p. 780) stresses the importance of the development of standards of judgment and the maintenance of the objective attitude that is strengthened by the extension of personal experience that comes from the study of history.

The structure of the book emphasizes the importance of the present. Although sixteen out of the thirty-two chapters deal with the period before the Civil War, only four touch the Colonial era, and sixteen are concerned with what are essentially modern times. The first half of the book stresses relativity, the second explains the development of modern institutions, and together they give protection against lack of proportion and overemphasis upon problems to which the present seems to give supreme importance.

No reader can fail to appreciate the excellent footnotes that in many cases constitute an invitation to further study. Paragraph after paragraph stimulates interest that is encouraged by timely suggestions of more comprehensive treatment of the problem under discussion. All readers will appreciate the consideration of the editor in giving the name of the publisher as well as the date of publication of books included in the excellent bibliographies that are found at the end of each chapter.

The Growth of the American Economy may well be used in an introductory one-semester course designed to give the undergraduate perspective, knowledge, and appreciation of our present-day institutions and problems.

D. Clark Hyde

University of Virginia

Wages of Agricultural Labor in the United States. By Louis J. Ducoff. Washington: Bureau of Agricultural Economics, United States Department of Agriculture, 1944. Pp. 193.

This report was prepared by the author in consultation with a bureau-wide committee under the project leadership of Carl C. Taylor.

Approximately one-half the report consists of statistical data gleaned from various sources, relating to the number and wages of farm laborers in the United States. The wages of farm wage-workers are compared with those of farm operators and with those of nonagricultural workers at various periods from 1910 to 1944. In the

comparison with farm operators it is pointed out that there is a considerable segment of operators whose net income is no greater than that of the average farm wage-worker. These, in the main, are the operators of small farms or of farms in low-income areas. On the larger farms the income of the operator is much higher than that of the wage-worker and has increased at a more rapid rate since 1939. In 1939 more than two-thirds of the cash farm wage bill was paid on 9 per cent of the nation's farms. Wage rates show a closer correlation with farm prices than with farm income.

As compared with industrial workers, the statement is made that if farm wage rates had the same relationship to hourly earnings of workers in industry during the year 1943 as they did during the World War I period, they would have had to average 80–85 per cent higher than they actually did.

The fact that farm areas produce a surplus population—and its bearing on wage rates—is pointed out. The effects of this have been intensified by technological developments in farming which have reduced the total labor requirement. The conclusion is rightfully drawn that future trends will depend much upon the opportunities for nonagricultural employment.

The concluding chapter is devoted to a consideration of postwar agricultural wage policy. It is pointed out that agriculture includes around four million persons who work for wages on farms and make up a fourth of the farm working force: that a challenging task for postwar agriculture is progressively to raise living levels for millions of low-income farm people—farmers, tenants, sharecroppers, and hired farm laborers. It is pointed out that, in the various measures of social legislation in the United States enacted to protect workers from the hazards of accidents, old age, and unemployment and to protect wage and hour standards, farm laborers have been excluded. It is suggested that as a part of the postwar agricultural wage policy it may be desirable to invoke legislative help in behalf of farm wage standards. The extension of social security legislation to farmers and farm workers is recommended.

The authors are to be commended for having performed well the task of relating the wages of farm labor to the economy as a whole. We still need a comprehensive appraisal of who the farm wage-workers in the United States are.

Ohio State University J. I. FALCONER

The Production Credit System for Farmers. By EARL L. BUTZ. Washington: Brookings Institution, 1944. Pp. vii+104. $1.00.

This is not a very good book, although it is not a very bad one. The production credit system, as here defined, is the part of the Farm Credit Administration, which supplies working capital to farmers. The author outlines the growth of the system since 1933 and reports on its interest charges and capitalization. Much of this information has been published in one form or another by the Farm Credit Administration or by the Bureau of Agricultural Economics, but, as a convenient summary, this part of the monograph is no doubt worth while.

The second half of the book, entitled "Has Production Credit Done Its Job?" undertakes to appraise the accomplishments of the agency. It hardly succeeds. The trouble is that Butz tangles almost immediately with the subsidy that the system receives from its endowment of government bonds. He never escapes. Now almost any subsidy does raise some nice question of public policy; the local production credit associations which make the actual loans are in competition with the country banks, so this subsidy is especially moot. And Butz's discussion seems to me very sane and balanced. He does not think all subsidies are reprehensible; he notes that they are an old American custom, and he would like to see the system self-supporting if possible. But surely there are other questions about this ten-year-old agency that are important too. The agency was devised to help good farmers get working capital during the depression. Did it? Now that farmers are solvent, is it needed? Is it especially needed in certain regions? For particular types of farming? Would it be effective in another period of falling prices and values? Or has the management heard so much about the virtues of safety and security that in another depression it would be as tight-fisted as any group of bankers? Is the agency still controlled from the top, or do farmer-borrowers participate in the management as well as in the press releases? Is not the organization—local associations, regional production credit corporations, plus regional intermediate credit banks—unnecessarily elaborate? Because of the author's preoccupation with subsidies, these questions are passed over.

At the risk of singling out Butz and the Brookings editors from a notable list of offenders, I would like to register another objection to

the book. The subject matter is simple, but the language is pretentious and obscure. One random example: "Realistically speaking it will be politically difficult to promulgate contract interest rates which vary geographically." Why not say, "Congress will object if one part of the country is charged a higher interest rate than another"?

J. K. GALBRAITH

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Civil Aviation and Peace. By J. PARKER VAN ZANDT. ("America Faces the Air Age," Vol. II.) Washington: Brookings Institution, 1944. Pp. x+157. $1.00.

Here is a good essay on a suitable topic. In pleasing contrast with the first volume of the series, wherein a large and intricate topic received only elementary treatment, this second volume gives mature treatment to a specific topic with which the author is thoroughly acquainted.

The title of the book does not promise a pointed and well-circumscribed discussion, and neither do the introductory pages. A critic of the first volume is not encouraged by the Preface statements that "the objective of this second volume is considerably broader" and that in these pages the author "has outlined a program which he shows should do much .... to assure the economic stability, prosperity, and consequent peace of the world."

But promptly thereafter the author proceeds to narrow the field and to focus attention on certain aspects of aviation appropriate to the size of the book and to his own special competence.

The major conclusions are largely negative, giving no assurance of world peace through aviation and demonstrating the unavoidable attachment of civil to military aviation, the futility of controlling international aviation for the maintenance of peace, and the impossibility of controlling all aviation internationally under present circumstances.

Thus, having reduced the main topic of international aviation to small proportions and relative impotence with respect to peace, the author very properly drops the larger problems of world order and proceeds to offer a suggestion of possible value in connection with world trade and national defense: namely, a proposal to promote foreign travel by Americans. Perhaps this suggestion is not comprehensive enough to be recognized as "the clue we have been seeking to a sound international air transport policy," but it is at least a good point to be included among ways and means as we face the intricate problems of peace in the air age.

ROBERT S. PLATT

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The Food Front in World War I. By MAXCY ROBSON DICKSON. Washington: American Council on Public Affairs, 1944. Pp. 194. $3.25.

The earlier volumes by Mullendore, Surface, and Surface and Bland have so intensively analyzed the history and the major economic phenomena of the United States Food Administration during and immediately after World War I that, together with the other available statistical and documentary evidence, we have fairly satisfactory knowledge of this phase of public administration.

Dickson's book contributes another very useful study of the strategy employed by the Hoover Food Administration in mobilizing public opinion, patriotic co-operation, and voluntary restraint. According to the author:

> Hoover asserted that three possible courses had been open: to allow prices to run the gamut of economic stress in wartime, to establish control through a system of rationing such as that which already existed in Europe, or to seek reduction in consumption through a "stimulation of self-sacrifice in the people" by an educational program. Of these three he felt that the third was preferable [p. 182].

At another place Hoover is quoted as follows:

> If this democracy has not reached such a stage of development that it has in its people the self-denial, voluntary self-denial, willingness to sacrifice, to protect its own institutions and those of Europe from which our own were bred, then it deserves to go down under the German hand and take another form of civilization.

These quotations indicate that the essential approach to the food problem chosen in 1917 and 1918 was, indeed, that of what was then called "propaganda" and which has since been renamed "public relations." The book covers this subject alone but thoroughly. It informs the reader about all the phases, the scope, and the intensity of the methods employed in the war-

food propaganda. If this most thorough digest from extensive documentary research lacks anything at all, it is a more elaborate reckoning of the accomplished economic results and of the substantial support the propaganda campaign had from the side of market intervention, such as price-fixing and licensing of certain processors.

By offering the citizen a historical record for comparison with the present war-food strategy, with production and distribution planning, and consumer and processor rationing, the study reveals by implication how much more simple was the food problem in the much shorter war of 1914–18 and what truly heroic efforts were made to avoid recourse to total planning.

Seen from the angle of comparative historical analysis, this small book is particularly stimulating. As an unexpected extra bonus, the reader learns a number of interesting facts about the role which many of the personalities who are still prominent in the field of agricultural policy in this country today played in World War I. A more accurate and revealing title would have brought the book more easily to the attention of those potential readers with the greatest interest in the subject.

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BOOKS RECEIVED

Atteberry, George C.; Auble, John L.; Hunt, Elgin F. *Introduction to Social Science: A Survey of Social Problems*. Abr. 1-vol. ed. New York: Macmillan Co., 1946. Pp. xii+787.

Barker, Ernest. *Essays on Government*. New York: Oxford University Press, 1945. Pp. vii+269.

Baykov, Alexander. *The Development of the Soviet Economic System: An Essay on the Experience of Planning in U.S.S.R.* ("National Institute of Economic and Social Research, Economic and Social Studies," Vol. V.) Cambridge: At the University Press; New York: Macmillan Co., 1946. Pp. xv+514.

Brownlee, Rebecca Jean. *The Income Tax in Delaware*. (Ph.D. Dissertation, University of Pennsylvania.) Philadelphia: Privately printed, 1944. Pp. vi+123.

Burns, Edward John, Rev. *Some Financial Trends of Commercial Banks of Philadelphia, Pennsylvania, 1915–1941*. (Ph.D. Dissertation, Catholic University of America.) ("Catholic University of America Studies in Economics," Vol. 16.) Washington: Catholic University of America Press, 1945. Pp. x+122.

Bush, Vannevar. *Endless Horizons*. Washington: Public Affairs Press, 1946. Pp. viii+182.

Caskey, Wayne F. *Freedom from Want after the War: A Postwar Program for the Reduction of Idleness and Want*. LaSalle, Ill.: Privately printed (1560 St. Vincents Ave.), 1945. Pp. 66.

Committee for Economic Development, Research Staff. *Jobs and Markets: How To Prevent Inflation and Depression in the Transition*. ("Committee for Economic Development Research Study.") New York: McGraw-Hill Book Co., Inc., 1946. Pp. xi+143.

Corbett, Percy Elwood. *Britain: Partner for Peace*. ("Institute of International Studies, Yale University.") New York: Harcourt, Brace & Co., 1946. Pp. 177.

Coupland, Sir Reginald. *The Durham Report*. An abridged version with an Introduction and notes. New York: Oxford University Press, 1945. Pp. lxviii+186.

Damalas, B. V. *L'Œuvre scientifique de François Simiand*. Paris: Presses Universitaires de France, 1943. Pp. xi+276.

Department of State. *Consultation among the American Republics with Respect to the Argentine Situation*. ("Inter-American Series," No. 29.) Washington, 1946. Pp. 86.

Filipetti, George. *Industrial Management in Transition*. Chicago: Richard D. Irwin, Inc., 1946. Pp. vii+311.

Finer, Herman. *The United Nations Economic and Social Council*. Boston: World Peace Foundation, 1946. Pp. 121.

Goodrich, Leland M., and Hambro, Edvard. *Charter of the United Nations: Commentary and Documents*. Boston: World Peace Foundation, 1946. Pp. xiii+400.

Groves, Harold M. *Postwar Taxation and Economic Progress*. ("Committee for Economic Development Research Study.") New York: McGraw-Hill Book Co., Inc., 1946. Pp. xiv+432.

Guérard, Albert. *France: A Short History*. New York: W. W. Norton & Co., 1946. Pp. 274.

Halperin, S. William. *Germany Tried Democracy: A Political History of the Reich from 1918 to 1933*. New York: Thomas Y. Crowell Co., 1946. Pp. viii+567.

Howenstine, E. Jay (ed.). *Post-war Markets: A Guide Based upon Official Information Prepared by the Bureau of Foreign and Domestic Commerce*. Washington: Public Affairs Press, 1945. Pp. vii+184.

Tharp, Claude R. *Social Security and Related Services in Michigan: Their Administration and Financing*. ("University of Michigan, Michigan Governmental Studies," No. 16.) Ann Arbor: University of Michigan Press, 1946. Pp. vii+180.

The Structure of Local Government: Analysis of the Problem by Donald G. Bishop; *Teaching Aids* by Edith E. Starratt. ("Community Study Series," No. 1.) ("National Council for the Social Studies," Bull. 19.) Washington: National Council for the Social Studies (for Maxwell Graduate School of Citizenship and Public Affairs, Syracuse University), 1945. Pp. 140.

Tiwari, Ramswarup D. *Railways in Modern India*. Bombay: New Book Co., 1941. Pp. x+284.

U.S. Department of Commerce, Bureau of the Census. *Statistical Abstract of the United States, 1944–45*, No. 66. (Compiled under the supervision of Morris H. Hansen.) Washington, 1945. Pp. xiii+1023.

United States Military Academy, Department of Economics, Government, and History. *Contemporary Foreign Governments*. By Herman Beukema, William M. Geer, and Associates. New York: Rinehart & Co., Inc., 1946. Pp. xxi+362.

Voskuil, Walter H. *Postwar Issues in the Petroleum Industry*. ("Bureau of Economic and Business Research, College of Commerce and Business Administration, University of Illinois, Business Studies," No. 3.) Urbana: University of Illinois, 1946. Pp. 32.

War Department, Overall Economic Effects Division. *The Effects of Strategic Bombing on the German War Economy: The United States Strategic Bombing Survey*. 1945. Pp. ix+286.

Wartburg, W. v. *Evolution et structure de la langue française*. 3d ed. Berne: A. Francke S.A., 1946. Pp. x+321.

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